The Builder.

No. CCCCV.

SATURDAY, NOVEMBER 9, 1850.

ON Monday, the 4th, the Institute of British Architects re-assembled to open the session in their old locality, Lower Grosvenor-street. Endeavours have been made during the vacation to obtain more convenient meeting-rooms, but without effect.* We would recommend to the attention of the Council a letter in another part of our present number, urging (as we have often before suggested) the erection of a *club-house for literary, scientific, and artistical societies.* We do not see any difficulties in the way of such an undertaking that could not be surmounted: the Government, too, ought to assist it, and would probably do so if it were brought before them by the proper parties in a proper manner.

We are anxious to see the Institute aid in the advancement of the art and its professors even more than it now does, to which end the leading members of the profession should attend and put their shoulders to the wheel. Papers and discussions touching the *live* things of the day should be encouraged: the architect's right position should here be asserted; the difficulties which beset him should here be combatted; and his doubts should here be resolved. The opening meeting of the session might be made an event, and we should be glad to find one of the leading members on these occasions placing before the Society, and through that, the public, a general view of such questions as may at the time be occupying the mind of the profession; enunciating his own opinions, aud inducing the expression of those of others.

In the absence of the President, Earl de Grey, on Monday, Mr. Fowler, V.P. took the chair, and congratulated the society on their position after fourteen years' existence. The usefulness of the new session, he said, would depend wholly on the members themselves: to them the council must look for papers, with which at present they were not well provided. The chairman also alluded to the coming Exhibition as an event which could not fail to bring to this country a large number of their corresponding members, and give an opportunity for the display of good feeling. The council had under its consideration arrangements for the advantage of their expected visitors, which would, doubtless, receive the sanction of the members generally when brought before them.

Professor Donaldson, in proposing a vote of thanks for works presented during the recess, was good enough to allude to the letter on the improvement of the Lord Mayor's Show, which has already appeared in our pages, as likely to lead to the introduction of more taste and greater meaning into these pageants. At Munich, in Belgium, and at other places abroad, he said, the public processions furnished representations and emblems of all the local trades as well as the arts and sciences, and he trusted that hereafter in England the pageants of the 9th of November would become a historical record of the times, and enlist public feeling in the cause of art. The Lord Mayor elect was a man of great public spirit, and it was a subject of congratulation to find that he was about to take the first step towards divesting "the Lord Mayor's Show" of its hitherto unmeaning character.—Allusion was also made to a work by Herr Semper, illustrative of the Theatre at Dresden, which contains several noble apartments, and is intended to be used for public fêtes.

A letter was read from Mr. Octavius Hansard, dated Cremona, stating that Signor Miglioranza, of Vicenza, was about to send to England a series of drawings of the innumerable fine remains of a Roman theatre, recently discovered there. "These fragments, and the mass of building remaining, are so perfect, that he has, upon pretty sure foundation, made drawings of a restoration. I may mention (continues the writer), that amongst the fragments is an Ionic cap, the volutes of which are not cut; but upon one of the faces is distinctly marked the method of turning them, which appears to be upon a different principle than we have hitherto known."

Mr. James Bell read a paper "On the Remains of the Architecture of the Roman Provinces," the object of which was to point out as worthy of study the large number of works left by the Romans in various parts of the world, which, though not so pure in style as those in Rome, offer many points of great beauty and interest. The remains in Treves, the monuments at St. Remi and Igel, and the buildings in the south of France, Nismes especially, were described. The well-known *Maison Carrée*, at the latter place, is more perfect than any temple in Rome. The amphitheatre here is of such a plan, that every pillar has one acute and one obtuse angle, so that the science of stone-cutting was much more called upon than in the Coliseum. At Nismes the restorations now going on are made by chemical means to resemble the old parts, so that care is necessary, when measuring and drawing, to discriminate. The Roman works in Spain are numerous: they suffered, as a matter of course, from the French armies, who appear, strangely enough, to have done all the mischief in their power to works of art. Africa contains many specimens of Roman work. The buildings of this period in Egypt are usually neglected. Palestine affords a rich harvest of Roman remains, particularly Palmyra and Balbec. In Asia Minor, he said, much yet remains to be investigated.

Mr. Tite fully concurred as to the value of this class of works for study, but more so as to the importance of studying the works of the best periods of classic architecture. Unfortunately, nothing was now thought of but mediæval art: all else was neglected. He wished that the Institute could do something to restore the ancient and better taste. Every young architect should study the ruins of Rome: he would maintain that a thoroughly good architect could not be made without distinct study of ancient art.

Mr. Donaldson, speaking of the extent to which the Romans, whom he regarded as benefactors of mankind, had diffused art wherever they acquired dominion, said it was to be regretted that there was no work, worthy of being named, illustrating the Roman remains in England. It should be a national undertaking.

A member, with reference to Roman works in our country, directed attention to the excavations commenced at Lymne, commonly called Stutfall Castle, in Kent, and expressed regret that a Pompeii should lie at our feet, and, for want of funds, remain entombed.

Mr. C. H. Smith (returning to Balbec) expressed a doubt as to the dependence that could be placed on Wood and Dawkins's work on the ruins of that place, particularly as to the ornament. He saw the original sketches some years ago, and they were so small and so slight that much was necessarily left for the imagination.

Mr. Scoles said he would not speak as to the book, but he had studied the ornament at Balbec, and it was as fine as in the best buildings of Rome.

We add a list of all who were present at the meeting. Of the Fellows, there were Messrs. T. L. Donaldson, C. Fowler, C. C. Nelson, G. Bailey, T. H. Wyatt, J. J. Scoles, C. Mayhew, S. Wood, J. T. Knowles, J. Bell, G. Godwin, J. J. Cole, W. J. Donthorne, D. Brandon, J. Tarring, G. O. Leicester, G. Mair, T. Smith, H. Roberts, J. W. Papworth, W. P. Griffith, J. Thomson, T. Bury, and W. Tite. Of the Associates,—Messrs. G. B. Williams, J. Gibson, C. Henman, W. Beck, R. Forster, W. Wright, G. Judge, A. R. Dobson, F. W. Porter, H. Oliver, C. J. Eddrup, A. Green, J. M. Lockyer, C. H. Howell, J. F. Wadmore, E. J. Kelly, N. Randall, A. J. Baker, J. Clayton, J. Norton, G. Vulliamy, E. Falkner, T. Y. Kimpton, and J. Fergusson.

The visitors were,—Messrs. C. Fowler, jun., J. B. Hewitt, J. T. Smith, R. Nicholson, J. B. Lockyer, R. Smyth, J. D. Wyatt, W. Roe, W. M. Teulon, S. Derby, J. Thorpe, J. E. Jones, R. Cole, E. W. Brayley, G. H. Knowles, N. Smith, C. R. Dillon, H. Pownall, W. Norris, R. L. Beck, S. Godwin, T. Gardiner, G. Hepburn, F. Whyte, C. H. Smith, B. Fletcher, E. C. Robins, E. T. Parris, G. Sibley, C. Backhoffner, T. J. Goodman, L. Cubitt, J. Wilks, A. Cole, T. D. Dighton, F. C. Wither, W. Scargill, E. Wilson, C. H. Purday, W. Papworth, G. Cooper, T. Robinson, T. J. Willson, E. E. Scott, J. S. Donaldson, H. Hood, F. Edwan, J. Disnay, W. W. Lloyd, Jacob Bell, Herr G. Semper, and Dr. Dickson.

THE CAUSES AND CURE OF "SMOKY CHIMNEYS."

IN commencing a series of papers on this subject, I may be permitted to devote a few lines in explanation of my reasons for doing so. It can scarcely be doubted that the more immediate cause of what are familiarly called "smoky" chimneys is the lamentable ignorance of the nature and principles of their action, which prevails to a very great extent. It is quite true that there are natural causes, but they are such as may be entirely controlled by the intelligence of man; and are only called into action by his ignorance of all save the merely practical part of his operations. An imperfect chimney ought therefore to form the exception instead of the rule, which it appears to do, even in this enlightened age; and it is with this conviction that I have allotted to myself the task of endeavouring to dispel the cloud of mystery that seems to envelope the existence of those most indispensable mechanical agents, chimneys.

* The following letter refers to the present rooms, and shews the opinion that exists concerning them:—"I will venture to affirm that there is not in London a worse ventilated or more ill-arranged room in its general appointments for the purpose of a general meeting than that at present occupied by the Institute. As far as ventilation is concerned, there are neither means of ingress for fresh nor egress for foul or vitiated air (or if such exist, they are upon such a scale as to be wholly insufficient); nor are the products of the combustion of the gas carried off: the consequence is, that the stench and heat are insupportable. Seats *without backs*, and so arranged as to take the maximum of space with the minimum of convenience, afford some faint notion of the arrangement, or rather the entire want of it. Should you succeed in your struggle for a seat, it is very problematical how you may get out (certainly not without making considerable stir). I would suggest, therefore, if it be the intention to retain the apartments in Grosvenor-street,—to throw the two rooms into one, and take in the lobby, by means of iron girders and standards,—to have fixed seats with backs, to hold not more than four, and radiating, if possible,—the back seats to be raised. This, with some system of ventilation, would minister much to the comfort and health of the members generally. "R. L. SIBLEY."

These papers being intended for the use of every class of the community which is either now, or may hereafter be, subjected to the inconvenience and annoyance attendant upon "smoky chimneys," as well as for those more immediately engaged in the business of arranging, constructing, or "curing" chimneys,—for the non-practical as well as for the practical man,—I will studiously avoid entering further into scientific detail than is barely necessary to convey such a correct impression of the principles involved, as may possibly conduce to the removal of this truly popular "fireside" grievance, the "smoky chimney."

If proof of the lamentable ignorance prevailing upon this subject be in any instance necessary, let the sceptic take a ramble through the streets of "this vast metropolis," and scarcely will he find a single dwelling, where the means of the occupant have enabled him to employ the "chimney doctor," that does not present monuments of it, in the shape of chimney tops of every variety of material, form, size, and construction.

A better state of things may be produced by placing the true causes of the imperfect action of chimneys with the means of preventing such imperfections before the notice of all interested in such matters, in a simple, clear, intelligible, and comprehensive manner; and with such intent, I will first endeavour to elucidate the nature and principles of the action of chimneys: I will then describe the causes of imperfect action; and, finally, the means of ensuring proper action; which are based upon the scientific theory of the question, and have stood the practical test that a long and intimate acquaintance with the subject has enabled me to apply. With these prefatory remarks, I will at once introduce my readers to the consideration of the first branch of the subject, in entering upon which we come first to inquire—What office does a chimney perform? The obvious reply is, that of conveying smoke from the firegrate or furnace into the atmosphere. That it performs this office is a fact requiring no argument to demonstrate; but how, or by what means it performs it, is a question not so easily disposed of.

Before proceeding further, let us see of what the atmosphere consists; for, as the smoke from fires is conveyed into, and, as we see daily, ascends through, it, there must be something in its nature and relation to smoke that connects it with the action of chimneys. First, then, as to its nature. The atmosphere is the volume of air which envelopes the earth, and is present at every point of its surface, extending upwards into the firmament to an indefinite distance. It is the air we breathe, and which is necessary to the support of animal life. It is composed of two kinds of gas, viz.,—oxygen gas and nitrogen gas; and in common with all other gases and æriform bodies it is called a fluid.

It is important that the term *fluid* be thoroughly understood, and its meaning remembered, as it will occur frequently in the consideration of our subject. Water, oil, and all other material substances, the particles of which, in their natural state, possess the property of flowing freely among each other (excepting those that are granular, such as sand, flour, corn, &c.), are called fluids. To use a more homely form of explanation, all substances that flow, or can be poured from one vessel to another (excepting granular substances) are fluids.

Smoke is a fluid, and, like the atmosphere, which is also a fluid, it is composed of gases. Hence, we find that a very close relationship exists between the atmosphere and the smoke which ascends into it; inasmuch as they both belong to the same class of natural substances, viz., fluids. Having traced this relationship so far, let us now inquire why the smoke from fires ascends into the atmosphere.

The science of chemistry has revealed to us that atmospheric air is composed of about 80 parts of nitrogen and 20 parts of oxygen gas; and that its specific gravity, or weight, bulk for bulk, compared with pure water, is nearly as 1 to 800, *i. e.* a gallon of atmospheric air is 800 times lighter than a gallon of pure water. The smoke created by burning coal is chiefly composed of carburetted hydrogen gas, which, when purified, or separated as far as possible from other gases, is the same as that commonly used for inflating balloons. Its specific gravity, or weight, as it is evolved from the coal, without being purified, is, compared with pure water, nearly as 1 to 1,600, or about 1,600 times lighter than the water. It is, therefore, compared with common atmospheric air, nearly as 1 to 2; or, in other words, the atmosphere is about twice as heavy, bulk for bulk, as the smoke from burning coal. Here, then, we have smoke a light fluid, and the atmosphere a heavy one, as compared with each other.

Now oil, which is a lighter fluid than water, immersed in a vessel containing water, and liberated near the bottom of the vessel will rise to the surface, just as common air rises in bubbles to the surface of water; and so it is with all fluids that differ with each other in specific gravity, or weight, bulk for bulk. The lighter fluid will ascend through the heavier, until it is stopped by meeting with a lighter fluid than itself; as oil rises through water to its surface, where it is stopped by the atmosphere, which is a lighter fluid than oil; or, until the lighter fluid becomes absorbed or mixed up with the heavier, where the nature of the two will admit of it, as alcoholic spirits and water.

This phenomenon may be illustrated by the following experiments:—Let AB, fig. 1, represent an ordinary scale-beam, evenly poised upon its fulcrum C, and supporting at its two extremities two vessels *a b* of exactly similar dimensions and weight; and let the beam AB be prevented from moving until required. Now fill the vessel *a* with a heavy fluid, say mercury, or "quicksilver," and the vessel *b* with a lighter fluid, as water: mercury being about fourteen times heavier than water, bulk for bulk, the vessel *a* will press downward with fourteen times as much force as that of the vessel *b*. Release the beam AB, and the end supporting the vessel *a* will instantly fall, and the superior pressure from the heavy fluid contained in *a* being communicated to the lighte fluid in *b*, through the medium of the beam AB, the latter will rise, and continue to do so until stopped by the limit to the travel of the beam AB.

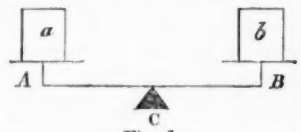


Fig. 1.

Again: Let AB, fig. 2, represent a bended tube, open at the two ends, and having a stop-cock in the centre, at C. Let the stop-cock be closed; the leg A of the tube AB filled with mercury to the level of the line *a b*; and the leg B with water to the same level. So long as the stop-cock at C remains closed, and the particles of the two columns of fluid thereby prevented from communicating with each other, the surface of each column of fluid will continue to stand at the same level, *a b*, and a perfect balance will be maintained. But, upon opening the stop-cock, C, the two columns will instantly come into contact at the point *c*, and the mercury, being the heavier fluid, will force the column of water up the leg B until the surface reaches the point *d*, fig. 3. At the same time, the surface of the mercury at *a*, fig. 2, will fall to the point *e*, fig. 3, and the point of contact between the two columns will be at *g*, fig. 3, instead of at *c*, as at first. The difference of level between the surface of the mercury at *e*, and the new point of contact at *g*, is occasioned by the pressure of the column of water at *g*, proving that the column of mercury, *e f*, is equal to the column of water *d g*, which, upon measurement, will be found to be about fourteen times the length of *e f*. It matters not what fluids are used in these experiments, the same results will follow, but in different proportions.

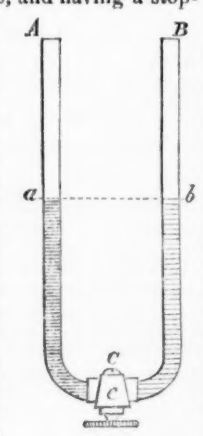


Fig. 2.

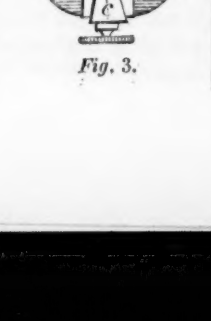


Fig. 3.

Now, in order to show how the same principle operates to cause one fluid to rise through another, let ABCD, fig. 4, represent a vessel filled with water to the level of the line *a b*: divide the volume of water into columns by imaginary lines *c d* and *e f*, which being all of the same depth, substance, and weight, will equally balance each other. Now, suppose a body of air introduced into the centre, or middle column, near its base, as at *g*; as air is lighter than water, it follows that the centre column, containing the air *g*, must be as much lighter than the surrounding columns as the body of air *g* is lighter than the same bulk of water. The centre column, then, being rendered lighter than the surrounding ones by the presence of the air *g*, the balance before existing is destroyed, and the central column below *g*, being pressed by a greater weight than itself, will rise; or, what amounts to the same thing, will make way for the air *g* to rise until it reaches the surface; the particles composing the column being moved aside by the ascending body *g*, in the same way as the water is moved aside by the bows of a ship to admit of her progress through it. As in the former experiments, it matters not what fluids are used, the same result will follow. If, then, we suppose the fluid contained in the vessel ABCD to be atmospheric air, and *g* a volume of coal smoke, we shall have obtained a perfectly clear demonstration of the cause, or reason "why the smoke from fires ascends into the atmosphere."

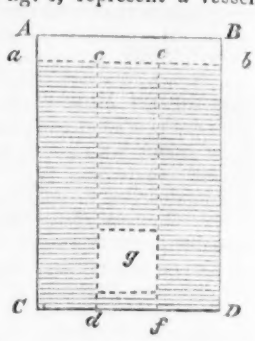


Fig. 4.

Every one knows, from personal observation, that smoke rises; but it is not so generally known that it does so because it is only one-half the specific gravity or weight, bulk for bulk, of the atmosphere; and therefore that it is forced upward by the pressure of the atmosphere beneath it. The cause of the ascending motion of fluids through each other, then, is gravity or weight; and the consideration of the laws which govern its action upon fluids belongs to that branch of physical science called Hydrostatics; a term which is derived from two Greek words signifying "water," and "standing" or "settling."

TBA.

THE DESOLATION OF WINDSOR.

THE Royal Borough of Windsor is just now one of the most ragged towns in the British empire, Ireland not excepted. The readers of THE BUILDER no doubt remember, that some years since a scheme was propounded and put in hand by the Board of Works for the "Improvement of the Town and Castle of Windsor," including considerable alterations in the approaches from the pretty little village of Datchet on the north side, and from Old Windsor on the east; and in aid of this scheme considerable sums of money were *extracted* from the rival railways which have the honour of conveying her Majesty and her Majesty's lieges to and from the Royal Borough. In carrying out these plans two new bridges are required to be thrown across the Thames in lieu of the present semi-ancient (one half is wood, and one-half iron, to which there hangs a tale which must not be told at present) bridge at Datchet, in order to direct the traffic round instead of through the Home Park. To facilitate the work, and no doubt directed by a wise economy, these bridges are both of the same design, and being of iron, are cast from the same patterns; but when they are to be finished is far beyond the knowledge of any one here. Nobody remembers when the foundations were commenced, and the fact that it has taken the whole of this summer to get parts of three ribs to one bridge and a portion of two ribs to the other fixed, renders all calcu-

lation impossible as to the time still required to complete them. Suffice it to say, that both railways have commenced, completed, and have had in use for some months, bridges of much more difficult construction, which were scarcely thought of when the Board of Woods and Forests commenced theirs. Turning our eye towards the castle from these *long* bridges, we find the north-west portion of the Home-park cut up in various scientific portions, the South-Western Railway having got a slice off the outer edge for their iron-road, then the new road from Datchet has cut off a large gusset, which has been appropriated to cricket, quoits, and foot-ball by the bachelors of Windsor, as we presume only upon sufferance. We trust that care will be taken of the valuable privilege so generously awarded them by Prince Albert: and the remainder is being divided into gravelled drives, skating ponds, and turf lawns for the benefit of the young branches of the Royal family. Wending our way up Datchet-lane—Falstaff's Datchet-lane, we doubt if he would know it now—we come to the smart new station, building by the South-Western Railway Company, under the direction of Mr. Tite: when completed, it will form an excellent screen between the North Terrace and the mean-looking buildings between it and the Thames side: independent of its ornamental character (Tudor-Gothic design in red brickwork with stone dressings) it seems to be planned with an eye to usefulness and convenience. Passing on up Thames-street we came upon a scene of desolation and wretchedness unequalled in our remembrance and experience: one side of the street, with one or two solitary exceptions, which only serve to make "desolation more desolate," is razed to the ground, leaving but a heap of debris behind, and opening to the view the crumbling walls and tottering ruins of a long-neglected and ill used portion of the Castle. Report says, and we hope truly, that it is intended to complete the design of Sir Jeffery Wyatville, by extending the North Terrace from its present termination at Winchester Tower to the Salisbury Tower. When this is done but few public walks will be able to compete with the *Terrace* at Windsor, and there will be little cause to grumble at present inconveniences. Passing George-street, which but a year or two since was the St. Giles's of Windsor, we find that the whole street has disappeared, and it is now the site of the Great Western Railway station, a building without any great pretensions to architectural show, the useful having evidently been studied before the beautiful, but they might, we respectfully suggest, complete the coat of compo which is so decidedly wanting on the principal front before the cold weather comes on. And now for a walk up to the castle, premising that, not having the *entrée*, we shall not attempt to describe that which cannot be seen by any other humble pedestrian during the absence of her Majesty. This summer considerable alterations have been made in the interior, for the better accommodation of the increasing number of inhabitants. Hot water and hot air has been laid on by Mr. Price, and preparations made for a better supply of cold water by Mr. Simpson, it having been recently discovered that Windsor Castle was sadly deficient in those very necessary adjuncts to a modern establishment. The smoky chimneys, too, are no longer to smoke. Under the directions of Mr. Turnbull, the smoke is to turn up instead of down the chimneys. The orangery under the North Terrace has been covered with asphalte, which, we have little doubt, will prove a good substitute for the lead, which our ignorant (?) forefathers laid over it. The drainage, too, has been reformed and reconstructed in accordance with modern ideas and notions on this important subject. An additional flight, or rather double flight, of steps, is being fixed in the east garden, which will be a great accommodation to numerous visitors, but as the work only proceeds at the rate of a step and a bit in a week, we have some misgivings as to when they will be ready for public use. By the bye can any of your readers tell who is the "Architect for Windsor Castle," and who, of course, is answerable for any *good or evil* doings which might be going on, supposing Joseph Hume or Colonel Sibthorpe chose to make any unnecessary inquiries in the next or another Parliament?

T.

THE EVILS OF TASK-WORK AND "TOMMY-SHOPS."

OF all the evils and abuses which exist in the building trade, I think there is none to exceed that abominable system known as *task-work*. It is a cause of misery and drunkenness: it not only injures the working classes, by producing drunkenness and immorality, but it causes scarcity of employment; for it has been proved that double the work can be done at the present time that could be performed many years ago by the same number of hands. But it must be borne in mind, that although double the work be done at the present time, this work, for goodness of workmanship and substantiality of construction, cannot in the slightest degree be compared with that done in former years, and under a better system. A man, to do his work well, must have a fair time to do it; but task-work will not allow that fair time. Task-work produces improvidence, and fosters immorality; it degrades the workman, and lessens the employer in the estimation of the workman; it renders the competent mechanic incompetent by any length of practice. Half the accidents which occur in the building trade owe their origin to task-work. Many a life and limb have been sacrificed through the reckless system of task-work.

The most ignorant and depraved persons are selected to do this work; and although it may appear strange to some of your readers that an ignorant man should be called upon to lead his respective department on a public building, it is nevertheless no more strange than true. In the first place no respectable mechanic will have anything to do with task-work, for it cannot be expected that a man possessing the smallest amount of respectability would stand and drive, swear and abuse, his fellow-workmen, as is usually the case on these jobs; nor is it at all probable that a man who is master of his trade would have any dealings with task-work; for the chief delight of a good workman is to see his work done in a masterly style, and not *scamped* in the manner which characterises these jobs; and another thing, it would be impossible for a respectable man to earn his wages at it; for although there are exceptions, the majority of task-masters, as they are, with all their perquisites in the shape of 2s. 6d. in the pound spent by their men at the *tommy-shop*, and other pickpocket arrangements, cannot earn their wages; and often, when the job is half up, draw the amount of men's wages some fine Saturday night, and then vanish.

It is a singular fact that although most builders are anxious to have sober, steady, and industrious workmen in their employ, yet, by encouraging this task work, they hold out a premium for drunkenness and immorality in their worst forms; for no job of any extent, carried on under this system, is without its *tommy-shop*, and the man who is the greatest drunkard and glutton is looked upon with the greatest favour. Those bits of tin, called tickets, are served out with the nicest precision: let a man be in ever such a remote corner of the building, he is sure to be spied out by the vigilant eye of the ticket clerk. I have known men to work all the week and earn their 30s. and on the Saturday night manage to take about five or six home to their wives and families, the rest being detained for tickets for which beer, gin, &c. were given; and then, Sir, they call the working classes improvident: no wonder when every encouragement is given for improvidence, and by those, too, who ought to do all in their power to check it.

But what is to be done to reform this atrocious system? In the first place, before a workman will experience any degree of pleasure in working at task-work, respectable and competent men must be placed at its head, men who, when they have authority, know how to use it. Task-work placed in the hands of sensible and honest men would soon divest itself of the evils which at present environ it; gin and beer would be uncalled for, at least on the work, and these tommy-shops would be found an incumbrance; drunken bricklayers and carpenters would tumble into their own traps, and sober and intelligent mechanics would fill their places. Let us hope that the time is not far distant when this much-desired reformation will be effected.

R. S. T.

SOME NEW CHURCHES.

Mr. A. B. Hope's Church, Marylebone.—The first stone has been laid of the new church to be built in Margaret-street, Marylebone, on the site of the late Margaret-street Chapel. Mr. Butterfield is the architect, and it is said he has a *carte blanche* as to the cost. Two "religious houses" for choristers and pensioners will be attached to it.

Trinity Church, Haverstock-hill, is now open for service, but we have not yet seen it: according to a description given us, the tower stands at the west end of the centre aisle, and with the spire is 160 feet high. It accommodates a large number of persons, partly in galleries. It is in the style of the 14th century. Side-aisles are formed to the chancel within the width of the nave, whose aisles are prolonged eastward, and there is a threefold arch to the chancel, the centre one of which is very lofty. Messrs. Wyatt and Brandon were the architects.

The New Church at Birch, near Colchester, has been erected from the designs of Mr. Teulon. It is in the Decorated style, built externally of flint and dressings of Caen stone. The porch is on the south side, and at the north-west angle a tower and spire rise to the height of 120 feet. Internally it consists of a nave, north and south aisle, chancel, and vestry. The nave and aisles are separated by columns and arches of Caen stone, with carved corbels supporting the arched principals of the roof, which is an open one of stained wood. The chancel window, and that at the west end of the nave, are of three lights each, filled with tracery; and each aisle is terminated with a large three-light east window. In each of the aisles are four side windows, from which the nave is lighted, all of them having mullions and tracery of Caen stone. The pulpit, reading-desk, and altar-railing are of carved oak, the material for the former being derived from the timber spire of the old church. The church will afford accommodation for about 500 persons: the builders are Messrs. Baldiston and Son, of Ipswich; and the cost will approach 4,000*l.*—the whole being the gift of Charles Gray Round, Esq., of Birch Hall.

All Saints' Church, Pontefract-lane, Leeds.—The first stone of this building was laid by the Rev. Dr. Hook, in 1846; but the progress was stayed by the secession from the Church of England of Mr. Haigh, by whom the cost was to have been defrayed. The building consists of a nave and aisles, north and south porches, north transept, galleried, and organ chapel—the latter to the south-east of the nave. The tower is engaged, and stands on the north transept: it is surmounted by a lofty spire. The nave has five bays internally, but no clerestory. The columns are alternately clustered and octagonal. The roofs of the nave and aisles are open, and all of them gabled. The chancel has a waggon-head roof ceiled. The exterior of the church has rather a bare appearance. The style is Geometric, and it has been erected at an expense of about 3,000*l.* Messrs. Healy and Mallinson, architects.

The Church of St. John the Evangelist, Little Holbeck, Leeds.—This building is in the early pointed style, and is constructed on the principle of the choir of the Temple Church, and the Lady Chapel of St. Saviour, Southwark, and has a vaulting of stone of equal height throughout. It is, perhaps, the only modern church which is vaulted with stone through its whole extent. The exterior is plain and simple, having an octagonal bell-turret instead of a tower. The church consists of a nave with aisles of five bays or arches in length, a chancel of three bays, and a north chancel aisle or chapel of two bays in length, the latter opening by arches into the chancel and the north aisle of the nave. There is, besides, a north porch of two stories, and a vestry adjoining the chancel. The nave is, with its aisles, internally, about 68 feet long by 49 feet wide; the chancel about 36 feet by 18 feet; the whole external length about 120 feet; the height of the internal vaulting about 31 feet. The vaulting is carried by slender clustered columns of Aubigny stone, excepting only that between the chancel and its side chapel, which consists of five detached shafts of polished Derbyshire marble. Each side bay of the nave is lighted by a couplet of tall lancets with shafted jambs and moulded arches: those at the west end have a circle superimposed. The upper story of the porch opens by an arch into the nave, into which projects a small stone gallery of ornamental character, intended to receive the organ. The tracery of the side chapel is geometric. The seats are all of oak. The floor is of tiles. The windows have stained glass. The architect is Mr. Scott. The builders, Messrs. Cooper, of Derby. The material of the exterior is the sandstone from the neighbourhood of Weetwood; that of the internal dressings is the Caen stone, excepting the columns, which are generally of the Aubigny stone. The internal ashlar, both of the walls and vaulting, is from the Hare Hill quarries. The accommodation is for between six and seven hundred persons.

PLANS FOR IMPROVING LIVERPOOL.

In June last the Liverpool Improvement Committee drew up an advertisement inviting architects, engineers, &c. to offer views and plans for the improvement of the borough, and the laying out of unoccupied lands in its immediate vicinity. The committee, as directed by the council, offered premiums of 50*l.* for the best plans, and 25*l.* for the second best. In compliance with the advertisement, twenty-three plans were sent in, each of which was accompanied with explanations and statements. After a careful consideration of all the plans sent in, the committee selected the plan bearing the motto "Rus in Urbe" (found to be by Mr. H. P. Horner), as entitled to the first premium, and that bearing the motto "Curator" (by Mr. Henderson) as the next in merit.

In submitting this report, the committee add, that the funds at the disposal of the committee, under the existing Improvement Acts, will be wholly absorbed by the improvements now in progress, and concur in the opinion expressed by former committees, that no comprehensive plan can be carried out solely from the surplus income of the borough, yearly at the disposal of the council.

According to the *Liverpool Times* almost all the plans possess great merit, though to carry out the designs of some of the exhibitors would cost the whole of the surplus income of the corporation for the next half-dozen years.

Mr. Horner commences his remarks by stating that a plan of the town, revised from time to time, showing the improvements wanted, should be kept by every public office, and the progressive improvements effected under the guidance of an officer, whose duty it would be to carry them out whenever practicable. Liverpool, he says, bears distinct marks of having been laid out with little view to the probability of its increase, and in few towns have more opportunities been missed of correcting original errors at later periods of its progress. Amongst the most striking defects in these respects he mentions the cutting off of leading thoroughfares, as if they were never to be extended, and the closing them with public buildings, thus affording no outlet, except at great distances, for main streets. Mr. Horner then alludes to the irregular manner in which the districts at the north and south ends of the town have been laid out, without any reference to their connecting themselves with the central part of the town.

As regards his plans for improving the outskirts, he remarks, that his attention was mainly directed to the connection of roadways at present detached, straightening those inconveniently crooked, providing for their probable communication with existing or proposed streets, and, above all, securing one of the best provisions for the health and comfort of an immense population—a belt of garden or park land, bounding the present extent of the town, and insuring the interposition of a stretch of comparative country, between the existing buildings and any more of a town character. He proposes to form gradually nine parks for public recreation.

Nearly all the competitors propose, as a matter of course, sweeping changes and improvements round St. George's Hall, that the building may be seen to advantage.

It is stated that the want of funds will prevent the formation, at present, of any of the proposed parks. To talk of want of funds for such a purpose on the part of such a town as Liverpool, wealthy and important in the highest degree, is quite nonsensical.

LIVERPOOL ARCHITECTURAL SOCIETY.

At a meeting of this society on the 30th ult. Mr. Chas. Barber, vice-president, in the chair, the attendance being more numerous than it had been at any previous meeting of the society held this year, a paper was read by Mr. W. Walker, of Manchester, on "Ventilation as a Branch of Sanitary Reform." Mr. Walker showed, that although sanitary improvement formed one of the principal topics of the day, as yet very little had been done in that direction. It was true that during the sway of the late epidemic, and since that time, more copious supplies of water had been furnished to large towns, some few drainage works had been undertaken, and in many of our public buildings great attention had been paid to the insurance of copious supplies of air, yet sanitary operations were, generally speaking, limited and imperfect. Ventilation was not merely a summer question, but at all seasons of the year we must have air. However, care must be taken that it is not introduced into rooms in an objectionable manner. Mr. Walker then alluded to some of the plans of ventilation which had been successfully adopted.

Mr. R. Rawlinson said, he quite agreed with Mr. Walker, that it was time architects took up the subject, and that ventilation should be considered in the structure of buildings. If it was necessary to put a roof upon four walls, it was quite as imperative to make provision for the due regulation and escape of air. Any attempts at ventilation after the house had been occupied, or even the adoption of so-called "ventilators" in chimney-breasts, were mere make-shifts. They did not give that which was required, namely, full, free, copious, and safe ventilation. To be safe, ventilation must be diffuse; it must also be perfectly under control. He had no hesitation in saying that a well-built house of modern construction, in the metropolis or Liverpool, was the most dangerous tenement that a man could put his head into. He lived in a London house, which was so well built that the door vibrated like an Æolian harp. When he sat by the fire writing he had to resort to the expedient of turning a bucket the wrong side up to put his feet upon, in order to escape the ill effects of the draft, the fireplace being low. He had no doubt that many literary men who became absorbed in their subject, and got their heads heated whilst their feet were cold, from the drafts which crept along the floor, had their constitutions materially affected from want of the necessary precautions. The corridor, lobby, and staircase of a house should be well warmed, which would do away with those cutting drafts that crept along the floors and were so injurious in winter. Allusion had been made to the ventilation of cottage tenements: as Inspector to the Board of Health it had been his duty to travel through the length and breadth of the land, and he had visited tenements of all descriptions. Doubtless many gentlemen in that room had read the statements drawn up by men in office, and imagined them to be overcharged; but he could assure them that there did not exist a man who could adequately describe the utter wretchedness in which the lower classes of this country lived in the nineteenth century, and in the midst of boasted civilization and refinement. It was laid down as a law that 800 feet of air was necessary for each individual, and he had seen thirty persons snoring fast asleep where there should have been but two. It was high time this state of things should be altered.

PATENT ABUSES.

An article which appeared in The Builder a year back on this subject, and which was followed by another six months after, entitled "Patent Usurpations," opened a question for discussion by the press, which has been seized on by all the journals and periodicals in succession.

The admirable print called *Household Words* sets forth, in *naïve* but simple demonstration, the hustling and plucking that a poor man is sure to encounter in his progress through the multiform offices in course of registration, chaffing, and waxing. The *Dispatch* goes somewhat further, and exposes the injustice and fraud perpetrated upon struggling genius; as also the impolicy of thwarting the free spirit of invention in a state the very essence of whose prosperity depends on the skill and superiority of her manufactures: but somehow, no one has as yet referred to the chicanery and artifice by the base practice whereof the poor inventor is too frequently choused out of his profits and recompense, when, after having run the gauntlet through the several levyers of black mail, after having met every demand, he is sure to be assailed as soon as his patent is sealed and signed by the sovereign.

In order to raise the funds required to clear all the toll-bars through his journey, the inventor must confide in some one the details of his plan: in many cases two, three, or more persons become acquainted with these confidential trusts, and in all cases where the material is an article of manufacturing fabric, it is indispensable that models be made in that material, and therefore that a further confidence be placed in the manufacturer in the express form of the thing to be patented.

Here, then, at the outset we find genius exposed to the chance of publication, either by the party who first entertained his proposition and mayhap rejected it, or by the party whose interest it is, above all others, to defeat the project of the discoverer,—namely, the manufacturer of the commodity which is the subject of patent.

In the case submitted to The Builder, the originality of the invention consisted in a new adaptation of tubes in terra cotta (encased in walls) to the purpose of carrying off smoke, or for chimney flues. Having paid the ordinary fees, and taken out a *caveat*, considering his invention safe, he sent for models to a tilery in Staffordshire. Of course there was no difficulty in getting cylindrical tubes in that material, but unhappily the object of their application oozed out!

Straightway the secret was disclosed, and long before the patent was or could be sealed, the manufacturer of fictilo wares fabricated terra cotta linings for chimneys. During the interval of time between the enrolment of the *caveat* and the registration of the patent, several oppositions were started to the proposed plan and design of the inventor: these claims and objections were duly heard and decided by the Attorney-General (Sir F. Pollock), and having been set aside, after some months' delay, and of course at a cost increased by such procedure, at length the end and object of all the expense, care, and toil of the invention was attained, and the patent sealed.

The next thing in the nature of events to be expected, as had long been anticipated, was the profit on the use of the patented plan by builders. Claims were made upon several so infringing the right supposed to be legalised by the Queen's sign manual. At first a hesitation followed the demand, and lastly, a positive refusal to acknowledge a patent right which had unavoidably transpired while in course of gestation through the offices.

The highest in the arts were, in these instances, the pirates, or at least the users of the principle so supposititiously secured.

As, amongst other illustrious edifices, the flues in question were adopted in Buckingham Palace, the disappointed artificer has put the question of his rights at issue as against the architect of the sovereign, whose palace derives the benefit of that ingenuity which has to this, the seventh year of his patent, been wholly unrequited.

In this case the mechanic (a bricklayer) is left to his hopes and the casual success of his trowel at five shillings a-day, with the contingency of his suit superadded—and he possibly may not be more aggrieved by the royal repudiation of his claims, than others, who, unlike the *protégé* of Charles Dickens, are unable to expose their grievances for the support and sympathy of an impartial public. Q.

CLUB-HOUSE FOR LITERARY AND SCIENTIFIC SOCIETIES.

I am a fellow of one of the most popular scientific societies in London, and constantly attend its meetings. Friends of mine have not unfrequently asked me to propose them as members, but when they have seen the place of meeting of the society they have (with only one or two exceptions) civilly withdrawn their request, judging of the company by the room they assemble in. My friends were certainly wrong in their conclusions, for the society is composed of all that is most brilliant in science and literature in the metropolis. But the room we assemble in gives you the idea of the "progress of science under difficulties." We want space for our library, for our meetings, and for servants. In vain committees meet: we can neither build before, behind, nor on one side. If we build an attic we shall have the house on our heads. From all I hear, there are many of the societies in London in the same predicament.

Now, Sir, I think that this state of things might be easily remedied. If men meet together in societies, that they may have better accommodation than each individually can

command, why should not "*societies*" club together for the same purpose. If four or five of these societies which are notoriously so ill-lodged were to club together, might they not be as well lodged as the gentlemen of the Carlton or United Service? Say that the rental which each society pays for a very bad house is 300*l.* a-year. If four societies were to join together, for 1,200*l.* a-year, a magnificent house, sufficient for the purpose, might be had. But for the above purpose a house ought to be built expressly. I myself am quite ignorant of the way in which such joint-stock company affairs are commenced or arranged; I therefore only put this forward as a hint which may be taken up and improved upon by more experienced heads. For example's sake, just to show the practicability of what I propose, I would build a house with the arrangement of a Venetian palace. On the first floor a large central oblong hall, with large windows at each end, having a suite of rooms on each side opening into each other, and into the large hall. This hall should be large enough to be *divided into two*, for the accommodation of two societies to meet in. I would have the second floor exactly the same as the first floor, also to accommodate two societies. The ground-floor and attics I should fit up for the accommodation of the servants, &c. of the societies.

I venture to send you this crude outline of a building which might be made an ornament to London, and certainly would be a great boon to some of our societies. A. D. S.

NOTES IN THE PROVINCES.

According to the *Bristol Mirror*, Clifton Suspension-bridge, long torpid, is now in a fair way of being speedily accomplished. ——It has been unanimously resolved at the Herefordshire Sessions to agree to a suggestion in the report of Messrs. Fulljames and Waller, the architects of the Joint Counties' Lunatic Asylum in course of erection at Abergavenny, that the institution shall be lighted with gas prepared in works of their own. The architects state that there would thus be a saving of 60*l.* a year, calculating 7½ per cent. on the outlay, as they would obtain for 130*l.* the same amount of light for which the Abergavenny Gas Company wanted 190*l.* on an agreement for twenty-one years.——Trinity Chapel, High Wycombe, was opened on the 23rd of October. The building is in the Norman style, and built of Kentish Rag and Bath stone, with nave and aisles, 60 feet long and 40 feet 6 inches wide. They are divided by stone columns with carved capitals and semicircular arches supporting a clerestory above containing twenty windows, glazed with rough plate-glass, each in one square. The main timbers of the roof are open, and the chapel is flanked by two towers, containing staircases to galleries. The windows have stained glass, and the vestibule and aisles are paved with blue and red Staffordshire tiles. There are also boys' and girls' school-rooms, and ministers' vestry, &c. erected in the rear. The whole of the works have been executed by native tradespeople at schedule prices. Total cost, including warming apparatus, gas, boundary walls, &c. 2,459*l.* 3s. 6d. Mr. C. G. Searle was the architect.——The interior of the Manchester Exchange is now completed, the last coat of varnish for the columns (which are painted in imitation of grey granite, and the pilasters in imitation of Sienna marble) has been given this week. The painting of the room does credit to Mr. Lomax, of that town, who has executed it. According to the local *Courier*, the extension, &c. of this building has cost 86,000*l.*——Some articles intended for Hackthorne Church, by the late Mr. C. Mainwaring, of Lincoln, and said to be of the value of nearly 300*l.*, were recently put up to auction by his executors, but purchased *for the church* by a liberal Jew broker of London, Mr. Benjamin Benjamins, who seems to have been ashamed of the *Jewish* (?) spirit of his *Christian* confreres.——We are glad to see that the gas companies are quietly acquiescing in the truth of the principle deduced from their own Parliamentary returns, that reduction of present and past prices uniformly yields increased consumption and larger profits. The Norwich Company, in announcing a reduction to 5s., with 5 to 10 per cent. discount, very plainly betray their quiet confidence in this result by adding that, "whenever the increased consumption of gas on account of the reduction in price, or other circumstances, will enable the company to make a further reduction, the directors will most cheerfully extend to the consumers this advantage." And that they have already tested the truth of the principle is equally clear, for they reduced their charge in 1848, and are already building new and much enlarged works. —— The committee for erecting a new congregational chapel at Yarmouth having invited several architects throughout the country to submit designs in competition, the selection has been made in favour of a design by Mr. Kerr, of Norwich. The cost is estimated at 2,340*l.* including railing, &c. The facing material is white brick, with moulded brick dressings,—the style after the Italian.——A movement is being made at Ryde for the erection of a new pier. Surveys and estimates have been made by Mr. T. Hellyer, architect, and a lithographed plan is in course of execution under his direction. It is proposed to have it of galvanized iron, about three times the width of the present one, with head in proportion.—— The *Morning Herald* states that there is a great deal of disgraceful jobbing and bungling going on at the new dock works at Devonport, and that on the reassembling of Parliament committees will be moved for to inquire into the present condition of these "new works and improvements."——On digging the foundations of a new church at Ilfracombe, an abundant spring of pure water, an article hitherto unknown in that town, has been discovered.——Many of the Sheffield gas consumers are complaining of being humbugged by their gas company supplying them with gas of so little illuminating power, that the cost of it is now greater than when the price was higher. It was to be expected that some black sheep would attempt to impose upon the public in response to their outcry for "cheap and good gas;" but such companies are really imposing on themselves; for they are thus destroying all chances of profit in the wide field of domestic economy, in which gas will come to be used *only* when it is both good and cheap. A clear conviction of the truth of this view will soon compel the companies to make their cheap gas good, for it is in the domestic extension of its uses that they must look for their most profitable return. As for the Sheffield company, however, the price, as well as the quality, of their gas is complained of, and the monopolisation of its manufacture, by the conversion of the two companies into one, is blamed. The price of coal there is only 8s. 9d. a ton, while that of gas is 5s. 10d. the thousand cubic feet, although coke yields more than the cost of the coal, namely, 10s. a ton! ——Cobridge Church, in the Potteries, has been considerably damaged by lightning.—— A silver model of the church of Lindfield, value 100*l.* has been presented to the pastor of the parish by the parishioners.——On Saturday in week before last, a new structure, named "Exeter Bridge," over the Derwent, at Derby, was opened. It is built of stone, and consists of three elliptical arches. The length is 200 feet, and the width 32 feet. Mr. James Trubshaw was the architect.——At a meeting of upwards of 2,000 ratepayers at Dewsbury, it has been resolved to establish waterworks in the vicinity, at a probable cost of about 15,000*l.*——The Bradford Gas consumers complain that, although the price of gas has been reduced at Huddersfield and Halifax to 4s., and at Leeds to 4s. 6d., they are still compelled to pay such prices as 6s. to 5s., while their gas company is not only reaping ten per cent profit, but "large bonuses" besides. They think it hard that with coals less than half the price, they should be called on to pay so much more than is now demanded in London and other large towns. A determination is therefore being come to "to stand it no longer."——A new savings bank is now nearly completed in Bury, Lancashire, situate at the corner of Manchester and Bank streets. It was built under the superintendence of Mr. Thomas Holmes, architect, and is a two-storied building. The lower story consists of a spacious bank, and waiting area for depositors; together with all the necessary arrangements as to safe, &c. required in an establishment of the kind: a staircase leads to the upper story, laid out for either offices, or a suite of public rooms. The total cost was 845*l.*, exclusive of gas fittings. The contractors are Messrs. T. and J. Crossley, of Bury. ——The new building belonging to the Haywood Mechanics' Institute at Bury is now nearly completed.——The Corporation of Newcastle contemplate the construction of two sewers, both of which will be of great extent and utility. —— A grant of 1,650*l.* was made, during the last session of Parliament, for the improvement and extension of the building accommodation at the Botanical Gardens, Edinburgh. This grant is now in course of being expended by the Woods and Forests, and the intention, says the *Edinburgh Register*, is to convert the present class-room into a museum, and to erect to the westward of it a new and enlarged class-room. The museum will, like the buildings, be open to the public under certain restrictions.——The total capital raised by loan for the building of the New Corn Market, at Edinburgh, inclusive of 62*l.* by old materials, has been 17,119*l.* 3s. 2d., which has been all expended except 562*l.* 6s. The expenditure embraces a sum of 1,091*l.* for obtaining the Act of Parliament; 4,727*l.* as the price of property purchased for the site; 9,498*l.* as the cost of erecting the new market; 1,065*l.* as interest and commission.

THE BURY ATHENÆUM AND ADJACENT BUILDINGS.

We mentioned a few weeks ago the ceremony of laying the first stone of the Bury Athenæum, about to be built from the design of Mr. Sydney Smirke, architect. Annexed we now give the proposed Elevation of the structure, together with that of the New Public Buildings facing New Market-street, already completed, from the designs of the same architect, and which immediately adjoin the Athenæum, and form one pile.

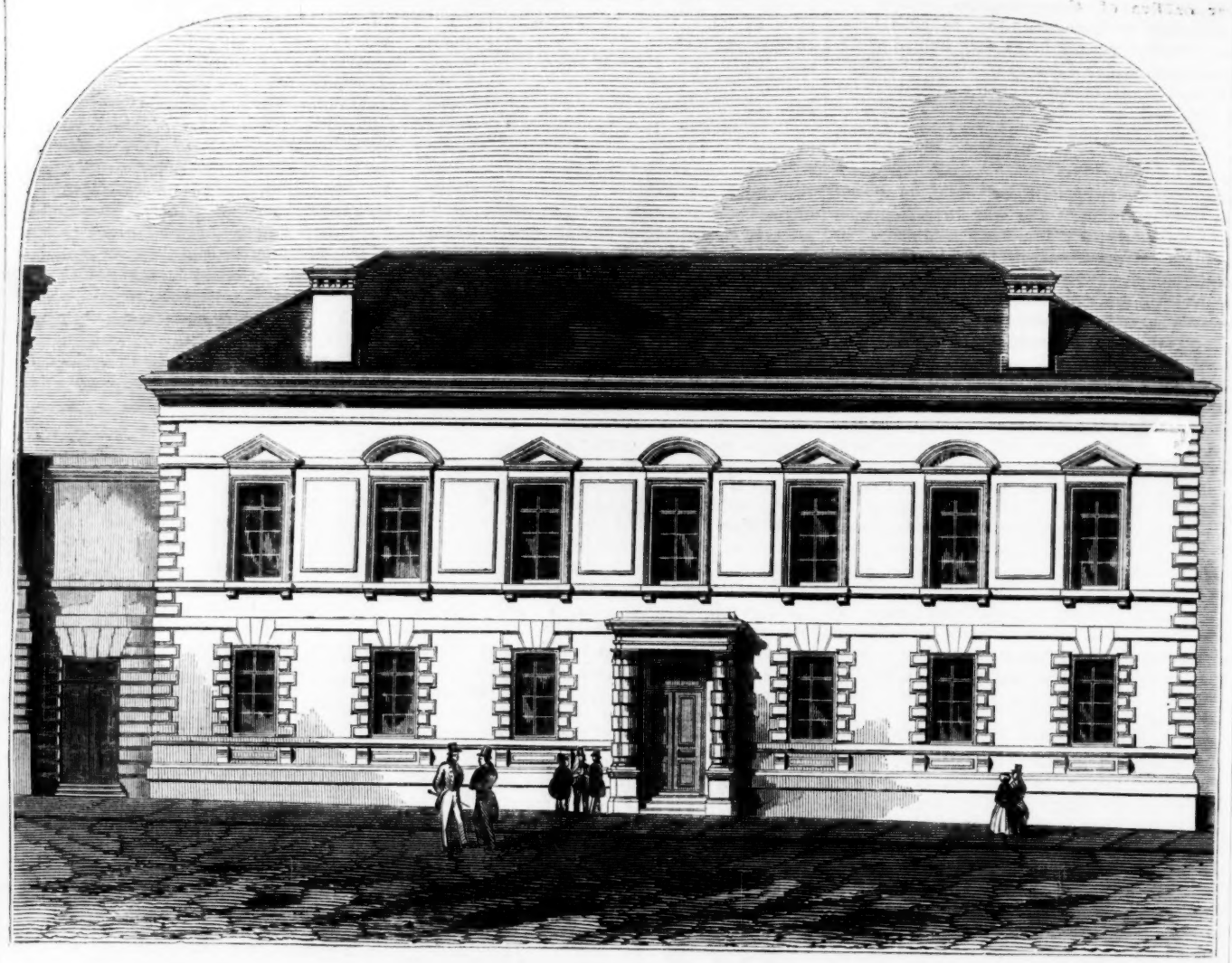
The Athenæum will be Italian Doric in style, and will be lighted on the upper floor with seven windows, the pediments being alternately angular and circular. The lower windows will be rusticated. There will be a rusticated doric porch at the principal and central entrance, and each of the two entrances will be reached by a flight of stone steps, 6 feet wide. On the ground floor will be a news-room, 30 feet by 17½; a library of about the same size; a class-room, 43 feet by 15; a museum, 43 feet by 30; and a committee-room, 17½ feet by 15. Upstairs there will be a fine room for general purposes, measuring 102 feet 6 inches by 43 feet, and 28 feet high. This room on occasions of meeting will hold 1,000 persons. At each end there will be a gallery; under one gallery will be the entrance to an ante-room; and under the other, to class, lecture, and retiring rooms. The principal entrance, which leads to this public room, will measure 20 feet by 14; the second entrance-hall, leading to the reading-room and museum, will be 17½ feet by 9 feet. On the basement floor of the building there will be four class-rooms, of various sizes; and one end, measuring 43 feet by 30, will be devoted to public baths. It can be completed about the middle of next year. The cost has been estimated at 4,000*l.* Except some small ornamental portions, which will be of Hereford stone, the building will be constructed of stone from quarries belonging to the Earl of Derby. Mr. James Hill is the contractor for the masonry, and Mr. A. Denney for the woodwork.

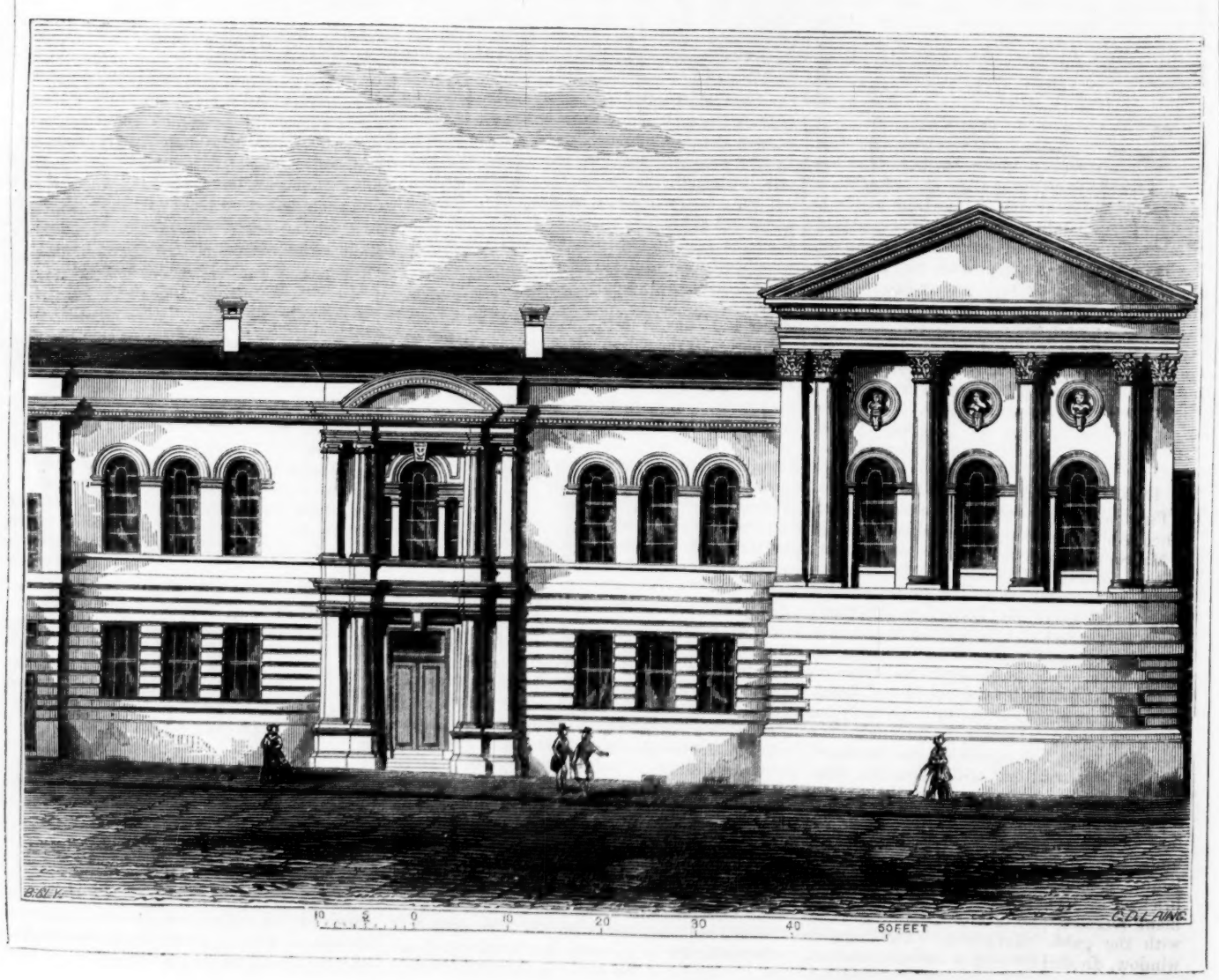
The new Public Buildings include a hotel, an assembly-room, a lofty court-house, with suitable offices, a police office, estate office (for the Earl of Derby), &c. The Assembly-room measures 70 feet by 36, and its height from floor to ceiling-centre is equal to its breadth. It has a vaulted groined roof, in three compartments (proposed to be painted in encaustic), with an "apse" for the orchestra in the centre of that side facing the door. The room is lighted with three principal windows at each end by daylight, and by three chandeliers at night. This room is said to be very successful both in effect and for speaking in.

Exhibition at Belfast.—It will be seen by an advertisement in last week's Builder, that an exhibition of modern works of art is being formed at Belfast.

THE BURY ATHENÆUM, AND PUBLIC BUILDINGS ADJACENT.

MR. SYDNEY SMIRKE, A.R.A., ARCHITECT.





NEW INDEPENDENT CHAPEL, BOSTON, LINCOLNSHIRE.

MR. STEPHEN LEWIN, ARCHITECT.

INDEPENDENT CHAPEL, BOSTON.

THE new Independent Chapel of Boston, Lincolnshire, has been erected from the designs of Mr. Stephen Lewin. We give an engraving of it, because of the use that has been made in it of moulded brick, to meet the want of funds. This chapel occupies the site of the theatre, which was purchased by the trustees, and the materials re-used where possible in the new building.

The plan consists of a tower and spire at the north-west angle, schools for 400 boys and girls on the ground floor, and the chapel above the same, having a semi-circular apse at the end. The chapel is approached by a flight of seventeen steps, sixteen feet long, and the tower contains a staircase for the accommodation of the schools. The main entrance is under a semi-circular-headed doorway, the jambs of which are recessed with moulded brickwork. On each side of entrance are blank recesses, and, above, a moulded cornice with the gable perforated by a large rose window, divided by turned columns, with caps and bases, into sixteen lights. The side walls of chapel are divided by buttresses of three divisions (which belong, by the way, to a later style), into five bays, having a square-headed window in lower part to light schools, and above a moulded cornice, with a semi-circular-headed window lighting chapel.

The semi-circular apse is pierced by three windows on ground floor, and above are seven windows in chapel. The tower, with the exception of the sills to windows, is entirely constructed of brick, of a tint approaching that of stone. The whole of the columns, caps, bases, cornices, arches, buttress, &c. are of brick, moulded and burnt for the purpose. The lower part of the tower has a deeply-recessed doorway, forming an entrance to the schools and chapel staircase.

The last story of tower has square piers at the angles with moulded caps and bases, above which are turned semicircular arches: the whole is crowned with a corbelled cornice, from which rises the spire, finished with an ornamental vane.

The interior of the chapel is divided by two aisles into three divisions of seats, the whole of centre seats on a level, the side tiers rising above one another with semi-circular seats at end: the pulpit is placed slightly within the apse, with seats round the same; the whole of the seats will be without doors,—the chapel is spanned by an open roof without a tie-beam; it is divided by trusses into five compartments, with segmental straining-pieces under each purlin: the trusses have semi-circular ribs or laminated arches formed by ten thicknesses of inch deal, eight inches wide, with wall pieces, hammer beams, and principal rafters in proportion.

The exterior length of chapel is 62 feet, the width 37 feet 6 inches, the internal length 56 feet 8 inches, the width 32 feet; the height of side walls from pavement, 31 feet; the height of gables, 46 feet; the tower height, 62 feet; the spire and vane, 48 feet, or a total of 110 feet. The whole cost of the building, we are told, will be about 1,300*l*.

THE GLASS IN THE HYDE PARK BUILDING.

Sir,—The day is not far distant when the construction of, and the material employed in, the Hyde Park Building will become fair subject of criticism. The Building Committee acted prematurely in so readily abandoning their own opinions. In the original design great care was taken in deciding on the material to be employed: in the first instance, glass for the roof was specified, 24 oz. to the foot: this, after due deliberation, not being deemed strong enough for ordinary contingencies, was increased to 30 oz. to the foot, the most competent judges being of opinion that thinner glass would not be safe.

In adopting Mr. Paxton's design, one would imagine the building committee considered that they were relieved from further responsibility, as the glass now specified for the structure is of the cheapest and commonest description, viz., *sheet glass* 16 *ounces to the foot, or one-sixteenth of an inch thick*—an article quite unfit for any *roof*, especially in sizes 49 inches by 10 inches, such as are employed.

There is not a similar instance of cheap glazing in any third-class building to be found: the first respectable hail storm would demolish the whole, if not protected by the canvas outside, but which could not be permanently retained.

The total cost of the glass will be only 10,000*l*. Surely out of 150,000*l*. to be paid for the building, if it remain, something better could have been offered in the glass way.

Camden.

HOPE FOR THE POOR INVENTORS.

The promise made on the part of the Industrial Commissioners, and supported by the House of Lords, but foiled by the people's own House, the House of Commons, will not, it would seem, be allowed to fall into the dirt, and we rejoice to think so. Every one is aware of the good understanding which subsists between the Society of Arts and the Industrial Commission. We do not pretend to have any official authority for saying so, but we doubt not the public will see, in the announcement now to be made, that the promise of the Commission is about to be supported at least, if not fulfilled, by a committee of noblemen and gentlemen, members of the Society of Arts, who have consented to act in the promotion of a "legislative recognition of the rights of inventors by means of an easy registration of them in accordance with the principles agreed on by the council of the society in 1849."

These principles are—

1. That inventors, designers, &c., ought not to be subjected to any other expenses than such as may be absolutely necessary to secure to them the protection of their inventions.

2. That the difficulties and anomalies experienced in connection with patents should be removed.

3. That the present term of copyright in design for articles of manufacture, and the protection afforded to the authors* and proprietors of inventions, and of designs in arts and manufactures, are inadequate.

4. That for carrying out these objects, the co-operation of all persons interested therein be invited.

The points on which the committee wish particularly to obtain information are, first, the effect which the existing system of patents may have had in suppressing, and thus depriving the public of the knowledge and use of, the inventions of those who are unable to bear the heavy expenses required under it; and, secondly, instances where the expenses have been fruitlessly incurred. The committee request that any facts in any way bearing upon these points may be forwarded to them.

The members of this commission have undertaken a very onerous task, that will require great discretion and discernment to prevent the remedy from being worse than the disease. The evils of the present system are very great, and urgently demand a remedy, but to cope with the cunning of fishing caveats and all the other plundering tricks and practices of patent-harriers and pirates will require no little skill and clear-steering while opening a fair way to poor inventors. The harassing annoyance and deadly effect of law proceedings in the hands of pirates flush of cash, with the legal pistol ready to blow out the brains of poor inventors, must not be overlooked: a cheap tribunal, in which mere money would not constitute power and right, is a great desideratum in patent law reform. And still, restringent measures for the suppression of a host of peddling and contemptible "improvements" and "inventions" that would otherwise shackle and entangle every trifle in the meshes of a cheap patent law, and thus obstruct, in place of promoting, inventive progress, are to be strongly recommended. In short, all the sagacity of this enlightened committee will be requisite to the proper fulfilment of the task which they have undertaken.

Among its members are the Marquis of Northampton, Lord Radnor, Sir J. P. Boileau, Sir J. J. Guest, M.P., Mr. Milner Gibson, M.P., Mr. H. T. Hope, M.P., Mr. S. M. Peto, M.P., Mr. H. Cole, Mr. Charles Dickens, and upwards of twenty other able or influential men.

A "Patent Law Reform Association" has also been formed, by members of the South London Committee for the International Exhibition, and which, we hope, will come to a good understanding with the committee of members of the Society of Arts for the efficient promotion of their one common object.

* Why should *authors* of inventions and designs be less cheaply or freely protected than authors of books?

RAILWAY JOTTINGS.

A line of three-and-a-half miles, at a cost of 50,000*l*. is proposed from Brentford to Wormwood Scrubbs, to unite the South-Western, Great Western, and North-Western.——The Great Northern are about to consider the expediency of extending their line by an independent route into York, instead of running over the York and North Midland——The Midland are conveying passengers between Rotherham and Sheffield at the rate of one farthing a mile. The cheap fares on the Tynemouth branch of the York, Newcastle, and Berwick line have very largely increased the number of passengers, and the receipts are now greater than under the old system. The charges are—first class, one penny a mile; second class, one half-penny. We are glad to find that the companies are becoming inclined to give a fair trial to a change of system which we have long recommended, and more so that they are profiting by it.——It appears that the portion of the West Cornwall line from Penzance to Hayle, estimated to cost 70,000*l*., can be executed for 40,000*l*. The contract for the entire completion of the line from Hayle to Penzance Pier has been taken at 29,100*l*.——Kilkenny is now connected by rail with Dublin. The works connecting the South-Eastern Extension with the Waterford and Kilkenny line at Lavistown have been executed by Messrs. Meehan and Mulquany as sub-contractors.——The Sydney papers contain an account of the commencement of the first Australian railway. It is to extend from Sydney into the interior.——The contract for the construction of the Calcutta experimental line has been taken by Messrs. Elmslie and Co. of London, whose tender was the lowest. The tenders for the Bombay and Tanna line (about twenty miles in length), were lately sent in.

A SCULPTOR'S VIEW OF THE ARCHITECT.

In the course of a very interesting lecture on the application of high art to sculpture, delivered last week in Edinburgh by Mr. Patric Park, the lecturer observed, that great injury to art had ever been done in this country by an appeal to precedent; but he trusted that the good sense of the country would gradually emancipate itself from that desperate tyranny, and that they would believe the truth that their natural perceptions were quite as good now as those of their ancestors or of foreign nations, and that they would resolve to think for themselves, instead of mistrusting their own judgment. In architecture this appeal to precedent had done infinite harm—not, however, that judicious appeal which aimed at acquiring knowledge, but that which justified error because it had been consecrated by time. He rejoiced at the improvement apparent in church building. Architecture, however, must give up its absurd claim to regulate the character of statues in certain interiors. The architect may make the walls and the floor, and he may decorate and paint them; he may make the pedestal, when the sculptor's judgment has pronounced the proper height; but he shall not step out of his proper sphere, and control the sculptor's intellect. The study of nature, like a landscape painter, is no less the duty of him who would be a great architect, than is the study of nature and the other branches of the fine arts, if he means to become anything better than a bricklayer, and the application of this high test is no less important to the public in architecture than it is in sculpture and in painting. The great architect is a great power which we cannot contemplate without profound respect. Approaching to even a controlling mind, providing for and anticipating the lowest physical wants and the highest intellectual requirements; regulating decoration with the eye of a painter. Providing light to meet every possible necessity; to harmonise action with thought, so that his walls, his roofs, his stairs, will each in their several relations be in unison with each other, with the spectators, with the domestic, the family, or the public. He is a sanitary magistrate, a good butler, an experienced cook, a constructive engineer, and a smoke doctor. He ministers to the luxuries of a princess in her bath-room and her boudoir, and to the comforts of the shoe-black in the scullery. He is a magnate in the church, and a manager of a theatre. He is an excellent gardener, and generally a good lawyer. He is a slater, a carpenter, a mason, and a plumber. He rises early and goes to bed late. He can do without his dinner when at work, and he can banquet without forgetting he has to rise in the morning. His levee is like that of a prime minister, attended by representatives of all classes, and all seeking favours. He is hand and glove with the groom and the watchman; the hares and dogs look to him for comfort; the lady's maid has her sly favours to solicit, from the hinge of a work-box to the key of the strong box, his services are called on as a banker: he is omnipotent; the sight of an architect creates a jubilee among the artisans of a country side; the whisky seller, the baker, and the butcher rejoice in his presence; he is prospective of comfort and work; he causes marriages, and, alas! sometimes deaths; he is the dispensing hand, which circulates among the industrious the wealth of the great. He is a man whom all honour and esteem, when the man who is in this relation to mankind *is a great artist*: without that grand qualification, the preceding character tumbles down like a pack of cards built up, as unsubstantial as his renown. He (Mr. Park) held, then, that great art was a necessity, and that a lofty standard of national morality and intelligence would by so much ennoble the aims of the artist: that a low class of mechanical art, based on mere trading principles, could never meet the upward sensibilities of mankind; and that its encouragement by the public was a direct proof of a compromise which should never exist between good and evil.

ON GOVERNING THE COURSE OF BALLOONS.

More than fifty years have passed since the ascent of the first balloon; but this beautiful invention, which seemed to promise so much for science, remains still little better than a mere toy, applicable to no useful purpose. Such it must ever remain until some means be discovered of propelling it *independently* of the wind, or of governing the direction of its course, *in spite of* the wind. It is now several years since a principle presented itself to my mind, by which, I believe these objects may be effected. And as I seek for no exclusive benefit from the suggestion, I proceed to lay it before the world, through your pages, that it may receive from practical men of science that measure of consideration to which it may be entitled; and, should it prove available, that the plan may be adopted for the public good, without restriction.

The principle I suggest is exceedingly simple. Let the propelling power be *the impact of a jet of elastic fluid* (such as steam or highly condensed air) *upon the atmosphere*. Let this jet be poured through a narrow tube, directed towards the point opposite to the balloon's intended course. When I consider the immense force with which a jet of steam

rushes out of the waste-pipe of an engine, I cannot but think that such a power exerted horizontally, would forcibly impel a floating body through so subtle a fluid as the atmosphere.

In order to apply this power, however, it must always be made to impinge upon the surrounding air, *in the direction opposite to the desired course*. To secure this object I suggest that the boiler, or containing vessel, should have a rotatory tap, into one side of which the horizontal pipe should be fixed, while the opposite side should be furnished with a tiller, or with a rack, so as to be capable of being partially turned on an axis. This top being rotatory could be steered as with a ship's wheel, or other machinery, so as to present the jet towards any point of the compass at will.

I do not imagine that the application of this principle could effect a progression against a strong breeze, but in moderate weather, with the wind at any point behind the beam, I suppose it would enable the aërial navigator to lie his course, or, even with a moderate breeze abeam, so to compound the forces as to make way by tacking. Perhaps the weight of the apparatus, water, fuel, &c. would present a barrier to the employment of *steam* as the motive power; but air in a highly elastic form, compressed by means of a forcing-pump, might possibly require machinery that would not be beyond the powers of a balloon to carry. Might not a succession of discharges of air highly rarefied be produced by a series of explosions of *gun-cotton?* This substance is very light and easily compressible into a small bulk, and a very simple apparatus might be sufficient for its employment. The first balloon that ever elevated human beings into the air contained 60,000 cubic feet, and carried a weight of about 1,700 lbs.—P. H. GOSSE.

DESIDERATA IN HOUSE BUILDING.*

IN every part of our houses there is room for improvement. We want walls combining warmth, cheapness, durability, and strength, faced with a material that shall imbibe neither the damp nor the smoke, and which an occasional ablution will make as good as new. We want a substitute for the everlasting paint-pot, for scaffolds, and stench. Cannot this be effected by the use of bricks, hollowed, hardened, glazed, coloured, and moulded, as the case may require? We want fireproof constructions for our floors and our partitions, not too heavy to be carried by ordinary walls. We may learn much from the French and Germans in their windows, and the fastenings thereof. The English sash, with its ropes, pullies, and weights, must be superseded at last. The Crystal Palace will itself suggest the use of glass for our roofs, and, as the year of the exhibition is, we trust, to be appropriately chosen for the repeal of the odious window-tax, there is no reason why every house of any pretensions built henceforth in this country should not have a transparent roof, and be thereby enabled to utilize the space between it and the attics. The ventilation and warming of our houses demand a reform. At present we are exposed to the tortures which Milton assigns to some classes of the damned—we are suspended between a furnace and a draught, sitting before blazing fires knee-deep in streams of cold air. We want plans for diffusing a temperate atmosphere through all the rooms of a house, without a fire in every one of them, which few can afford, and which is far from advisable. The English might learn a good deal from the stoves in use through the continent, especially those of Russia and Sweden. We want also a mild substitute for the feather bed and triple blanket, in which so many of our countrymen are still nightly stewed from November to May. Among other *desiderata* may be enumerated a more economical and effective kitchen apparatus, especially one that shall consume its own smell, or otherwise dispose of it;—a mode of internal communication which shall dispense with the bell, and, if possible, also with the journey of the servant to ask what is wanted;—window blinds that shall answer their various purposes better than either holland, or wire-gauze, or Venetian blinds, inside or out;—plates and dishes that shall not break quite so fast;—furniture that shall not compel careful housekeepers to shut out the sun; and decorations that will stand the air of London more than three or four years.

* From the *Times*.

Books.

A Hand-Book for the Parish of St. James, Westminster. By the Rev. MACKENZIE WALCOTT, M.A. London: Skeffington, 1850.

THIS pleasant and useful little volume will serve to make the houses of Pall-mall, St. James's-street, and the Haymarket more suggestive, to many, of past men and times, than they have hitherto been. "The canopy of smoke, the ceaseless importunate din, are to many the only characteristics of the metropolis. They pass without one solid thought the suggestive presence of its countless buildings,—without emotion jostle through the crowded thoroughfares, to them only the roads that lead to their places of business, concourse, or listless amusement, intent only upon their own selfish errands. Little do they wot of the outpouring of human energy, or reck of the great truth that every house has its momentous history; there the drawn curtain telling that the dusky footsteps of the Silent One have crossed the threshold; there the light ringing voices, and strains of merry music, are the notes of preparation for some home-festival; and there the last of his race, without a mourner, is borne away to the common city of the dead."

The changes which a few years have made in the parish are marked in the following paragraph in Mr. Walcott's peroration. "We have been treading through the stream of Time, upon the stepping-stones of Civilization, marking how Piccadilly is no longer a quagmire, with herbalists looking wistfully for the pretty blue-eyed bugloss, where the banks were dry. We have glanced at the period when, in the fields round the Haymarket, good housewives went out to spread their snowy linen on the green turf to bleach: and along the modern Conduit-street, where, not two centuries since, the sportsman shot the snipe; and Dr. Sydenham pursued the thief, who stole his silver tankard from under his very eyes, until he grappled with him among the bushes in Bond-street." In the registers of St. James's are found, amongst many others, William Vande Velde, under date 1693, Dec. 16; Michael Dahl, Swedish portrait painter, the rival of Kneller, 1743, Oct. 26; James Gillray, the caricaturist, 1815, June 7; and G. H. Harlow, the painter, 1819, Feb. 16.

The Journal of the British Archæological Association. No. XXIII. Oct. 31st.

THE new number of the Journal makes a very interesting and valuable volume. Not long ago it would have been considered of itself an ample return for the guinea subscription to the society. It is wholly occupied by the papers read at the Lancaster and Manchester Congress, and includes Mr. Pettigrew's paper on Archæology, Mr. Ashpitel's on Manchester Cathedral, Mr. Planché's on the Stanley Crest, Rev. Mr. Bruce on Norman Fortresses, Mr. Harland on Ribchester, Mr. Whittaker on Local Nomenclature, Mr. Gilbert French on the Tippets of the Canons Ecclesiastical, Mr. Gregan on Chetham's Hospital, Mr. Sharpe on Furness Abbey, &c. &c.

Miscellanea.

THE HAMMER.—The hammer is the universal emblem of mechanics. With it are alike forged the sword of contention and the ploughshare of peaceful agriculture—the press of the free, and the shackles of the slave. The eloquence of the forum has moved the armies of Greece and Rome to a thousand battle fields; but the eloquence of the hammer has covered those fields with victory or defeat. The inspiration of song has kindled high hopes and noble aspirations in the bosoms of brave knights and gentle dames; but the inspiration of the hammer has strewn the field with tattered helmet and shield, decided not only the fate of chivalric combat, but the fate of thrones, crowns, and kingdoms. The forging of a thunderbolt was ascribed by the Greeks as the highest act of Jove's omnipotence, and their mythology beautifully ascribes to one of their gods the task of presiding at the labours of the forge. In ancient warfare the hammer was a powerful weapon, independent of the blade which it formed. Many a stout skull was broken through the cap and helmet by a blow of Vulcan's weapon. The armies of the crescent would have subdued Europe to the sway of Mahomet; but on the plains of France their progress was arrested, and the brave and simple warrior who saved Christendom from the sway of the Musulman was Martel—"the hammer." The hammer, the saviour and bulwark of Christendom! The hammer is the wealth of nations. By it are forged the ponderous engine and the tiny needle. It is an instrument of the savage and the civilised. Its merry clinks point out the abode of industry. It is a domestic deity, presiding over the grandeur of the most wealthy and ambitious, as the most humble and impoverished. Not a stick is shaped, not a house is raised, a ship floats, a carriage rolls, a wheel spins, an engine moves, a press squeaks, a viol sings, a spade delves, or a flag waves, without the hammer. Without the hammer, civilisation would be unknown, and the human species only as defenceless brutes; but in skilful hands, directed by wisdom, it is an instrument of power, of greatness, and true glory.—*The Scientific American*.

THE ARCHÆOLOGICAL INSTITUTE.—The first ordinary meeting of the Archæological Institute for the session of 1850 and 1851, was held at their rooms in Suffolk-street, on Friday, the 1st inst., Mr. Edward Hawkins, F.R.S., in the chair. Several communications were read; amongst others, one from Mr. Birch, of the British Museum, being the description of an ebony stud and plinth brought from Egypt by the Marquis of Northampton, bearing the name of Amenophis the Third and his daughter, a queen, and supposed to have been part of the inlaying and fastening of a box. Wherever the name of this king appears on the monuments in Egypt, it has been very carefully obliterated, and on the stud and plinth in question both his name and that of his daughter had shared the same fate, probably owing to the religious animosity that prevailed in Egypt after his death between the *Aten*, or "disk" worshippers, and those of the older religion of *Ammon*. Mr. Birch also pointed out that this plinth showed that Amenophis the Third associated with himself in the empire a princess, the daughter of himself and the Queen *Taia*, probably the so-called Princess *Amen-si*, a new fact in Egyptian history. On the table were exhibited some works of ancient and mediæval art, including a beautiful silver gilt cinque-cento cup and cover, inlaid with cameos and enamel, a fine carved ivory triptyck, and a silver-gilt collar composed of medallions decorated with coats of arms and emblems of archery, with a popinjay suspended from it, bearing the date of the 17th century, evidently belonging to some distinguished archery society.

CONSUMPTION OF SMOKE AT MANCHESTER.—The result of the enforcement of the Act for purifying Manchester from smoke appears to be most satisfactory. One of the council reports, among other particulars, that he lately waited on Mr. Hugh Beaver, and ascertained that the quantity of coal formerly used in his manufactory was seventy-eight tons per week, whilst a weekly saving is now effected of twenty-eight tons. "I visited Messrs. George Clarke and Sons' manufactory," continued Mr. Howarth, "and they told me the saving they effected was upwards of forty tons per week: they formerly used 140,—now less than 100. They have expended upwards of 1,200*l*. on new boilers to abate the smoke nuisance, and they expect the outlay will be repaid by the saving of coal effected, in a year and a half. I asked them," continued Mr. Howarth, "if they did not thank us for enforcing the system? The reply from Mr. Clarke was, 'Undoubtedly; and I wish you would enforce it more strictly upon our neighbours: it would save no trifle in the cleaning of windows, as well as prove beneficial to the public health.'"

A MONOLITH FOR THE LATE GEORGE STEPHENSON.—According to the *Derby Mercury*, Mr. James Trubshaw, architect, has under his consideration at the present moment the project of erecting a monument to George Stephenson, in one single stone, which would be several feet longer than Cleopatra's needle.

METROPOLITAN COMMISSION OF SEWERS.—The ordinary monthly court was held on Friday 1st inst. Amongst new works ordered on the recommendation of Mr. Forster were 110 feet of 12-inch pipe sewer in Cardigan-street (district rate), at an expense of 15*l.*; 70 feet of 15-inch pipe sewer in Gloucester-place, 17*l.* 10s.; trapping gullies in Clifton-road, &c., at an expense to the district of 14s. 6d. each. Mr. Forster also suggested, in order at once permanently and satisfactorily to drain the whole of St. James's parish, that the following extensive works should be carried out:—First, at the expense of the district, being re-constructions:—

				£	s.	d.
2,194 feet	½ brick sewer, 3 feet 9 inches by 2 feet 3 inches, in		Queen-street, Great Windmill-street, Marshall-street, and Tyler-street	1,012	17	6
70 feet	do.	do.	in Broad-street	32	7	6
490 feet	do.	do.	in Great Pulteney-street	226	12	6
860 feet	do.	do.	along King-street to Argyle-street	354	15	0
200 feet	do.	do.	in Warwick-street	82	10	0
320 feet	do.	do.	in Argyle-place	132	0	0
440 feet	do.	do.	in Argyle-street	181	10	0
250 feet	do.	do.	in Blenheim-street	93	15	0
260 feet	do.	do.	in Marlborough-mews	91	0	0
500 feet	do.	do.	in Brewer-street	231	2	6
160 feet	do.	do.	in Silver-street	66	0	0
100 feet	12-inch pipe sewer		in Blenheim-street	25	0	0
150 feet		do.	in Blenheim-mews	37	10	0
200 feet		do.	in Queen-street	50	0	0
125 feet		do.	in Nag's Head-yard	31	5	0
230 feet		do.	in Smith's-yard and court	69	0	0
280 feet		do.	in Wellington-mews	70	0	0
220 feet		do.	in Dufour's-place	66	0	0
190 feet		do.	in Cross-street	78	7	6
200 feet		do.	in Cross-court and South-row	50	0	0
200 feet		do.	in West-street	50	0	0

Total cost, 3,031*l.* 12s. And secondly, the expense to be defrayed by a special sewers' rate, the streets and places where the works were to be executed not being co-extensive with any separate sewerage district:—

				£	s.	d.
240 feet of ½ brick sewer, 3 feet 9 inches by 2 feet 3 inches, in			Brewer-street	111	0	0
170 feet	do. and 100 feet of 12-inch pipe sewer		in Silver-street	100	2	6
290 feet of 12-inch pipe sewer			in Golden-square	72	10	0
90 feet	do.	,,	in Sherrard-place	22	10	0
90 feet	do.	,,	in George-passage	22	10	0
80 feet	do.	,,	in Marlborough-court	20	0	0
80 feet	do.	,,	in Lowndes'-court	20	0	0
120 feet	do.	,,	in Pew's-place	30	0	0
190 feet	do.	,,	in Little Marlborough-street	47	10	0

Total cost, 446*l.* 2s. 6d. Total quantity of brick sewer, 6,059 feet, and of pipe sewer, 2,935 feet.

The Court agreed that owing to the great magnitude of these works, the recommendations contained in the report should stand as a notice for next meeting, as it was not desirable to undertake such works without letting the public know what they were about.

OMNIBUS IMPROVEMENTS.—Among the applications for space in the great House of Industry, is one for a working model of a new system of propulsion, which dispenses with the locomotive and its noise and smoke, and which the patentee, along with the British Inventors' Protecting Company, propose to apply to the omnibus traffic of the metropolis and other large cities, in such a manner as not to cause any interruption to ordinary street traffic. A working model has been exhibited in the Polytechnic Institution.——Mr. C. J. Pownall, of Addison-road, Kensington, has patented an omnibus tell-tale, for registering the number of passengers who enter the vehicle. An elastic step is pressed down by the foot of the passenger in getting up, and completes an electro-magnetic circuit in a concealed apparatus, which registers each full depression of the step. The idea is no doubt ingenious enough, but we doubt its working well in every-day use. The moment any one puts his foot upon the step and registers his number, either he is in for it or the conductor is so, and it is but too easy to guess the result of such a "registration" on the temper and the tongue of either, when "the wrong omnibus" happens in a hurry to be even momentarily stepped on.

CHANCERY-LANE.—It appears to be not only possible, but probable, that notwithstanding all that has been said, the present singular opportunity of converting this lane into a double wheel-way throughout, by widening the Holborn end of it, at the eastern corner, recently laid open, is to be neglected and lost, although Mr. Taylor, who has worthily exerted himself while cold water was being cast at all hands on his endeavours, has managed to reduce the whole estimated cost of the measure to 2,000*l.*, of which the Paving Commissioners are still willing to pay 750*l.* Why, a tablet of marble commemorative of the donor's liberality, and planted in the corner wall of Lord Radnor's premises at the head of the lane, would be itself well worth the whole amount. What think you, my Lord Radnor? As the ground landlord of so much valuable property in that precise locality, your lordship will not object, we hope, to the erection of such a tablet,—even to your own honour and glory. It would be almost a pity to allow the Paving Commission of the public, to have any place in an inscription so perpetually exciting to the public gratitude for a private benefaction.

WHITE ZINC.—Mr. E. Protheroe, of Austin-friars, has taken out a patent for improvements in the manufacture of zinc oxide for paint. He claims, amongst others, an arrangement of apparatus, consisting of a reverberatory furnace, in which the zinc is melted, and two retorts, in communication with each other, into which the metal flows; so that a constant clean surface of melted zinc is kept submitted to the action of currents of atmospheric air. The lighter portions of the oxide pass up a shaft, and, by a current of steam, to the condensing chambers, the air passing off through suitable chimneys. Bleaching the light oxide by means of water acidulated with sulphuric or acetic acid, and combining the same, to facilitate its drying, with umber, dissolved in muriatic acid over a fire, concentrated to the consistence of butter or honey, and mixed with resin, are also amongst his claims.

A LARGE MOUNTAIN OF QUICK-LIME!—A singular and important discovery, it is said, has been made at Applecross, on the west coast of Scotland. A large mountain called Tore More, on being accidentally excavated, presents a substratum of pure lime, within five feet of the surface; and it is ascertained beyond a doubt that the whole mountain, except an average surface of twenty feet, consists of lime fit for the field or the mason. The hill appears to have been at one time a stupendous limestone rock, submitted to the influence of immense heat. On the summit are found traces of volcanic origin.

SOCIETY OF ARTS.—The first meeting for the coming session will take place on the 13th, when Mr. Paxton will read a paper on the building in the park. On the 20th, an exhibition will open of articles patented and registered during the last eighteen months, with the view of practically showing the state and progress of invention during that period. This is intended to be the first of a series of annual exhibitions, each of which will open the sessions of the society, and will embrace all the inventions of the preceding twelve months. The idea appears to be a good one.

ALLMAN'S VOLTAIC LIGHT.—Mr. Allman's patent light, it is said, has obviated the objections which it was ultimately fully admitted that we were right in making as to former attempts, at a time when all were assured that gas was about to be extinguished. A trial of this new endeavour for several hours has been made at the Polytechnic Institution, which we understand was very successful. We have not yet seen it ourselves. One great point said to be gained is the mobility of the electrode by the electric current, according to its own requirements, without any special mechanism: another is, the obtainment, by these and other means, of a steady and continuous light.

THE ROYAL ACADEMY.—As we fully anticipated, Mr. C. L. Eastlake, has been placed in the Presidential Chair. This, we suppose, will remove Mr. E. from the Secretaryship of the Fine Arts Commission, and be a loss to him in a pecuniary point of view. A vacancy in the list of Associates was filled by the election of Mr. Hook.

DECORATION AT DRURY-LANE THEATRE.—The decoration of Drury-lane Theatre by Mr. Fred. Gye, for the ball on Thursday night, and which we suppose will remain for the coming series of concerts, is exceedingly successful, offering a striking contrast to the melancholy failure in this respect at another house for the "National Concerts."* The stage is lined with white, powdered with roses in gilt wreaths; the chandeliers are carried by wreaths of roses, and statues of the "Nine" are cleverly disposed against back-grounds of pink-shaded gauze flags. The fronts of all the boxes have cream-coloured hangings with swags of artificial flowers: the effect of the whole most summery and pleasant. The glass curtain, which we once described, has been brought back and added to; it includes now, according to a calculation, as nearly as may be, 90,000 glass drops.

SALE OF GLASTONBURY ABBEY ESTATE.—This property was divided into three lots. The first comprised the Abbey, which had cost 8,000*l.* in its erection; the ancient ruins, and about forty acres of rich land. The first offer was 7,000*l.*: the lot was sold for 10,000*l.* The next lot consisted of a residence let at 40*l.* a year, and an acre of ground attached: these went for 1,150*l.* The estate was purchased by Mr. H. Danby Seymour, M.P. for Poole. The chancel was to be sold to that gentleman by private contract.

BELL TURRETS FOR BURGLARIOUS TIMES.—A correspondent, R. M., suggests that the proprietor of every lone house should have a large bell hung conspicuously on the top of his house, with cords communicating with two or three of the principal bed-rooms, so that upon hearing thieves in the house alarm may be given to the whole village. The fact of its being there would in all probability be a preventive to an attempt. The turret bell is an old plan, but at present almost out of use. Architecturally it makes a nice feature. We have had several inquiries as to modes of securing particular houses from thieves, but must leave it to the individual advisers of the parties in question. Iron plating in panels of doors and window shutters, bars from side to side, and small dogs, are efficacious.

TANKS FOR CATTLE.—A correspondent suggests that railway directors ought to have water tanks prepared at their respective depôts for the cattle sent to town by rail, as the protruding tongues, and other revolting and even alarming symptoms of thirst displayed by the poor brutes, but too plainly bespeak the want of such accommodation, which is all the more urgent that, strange to say, there is none even at Smithfield. The suggestion has been repeatedly, but it is painful to think how uselessly, urged in these columns.

PLAN OF THE BUILDING IN HYDE PARK.—Mr. Wyld, with his usual promptitude, has had a *penny* plan of the Exhibition building prepared for the million.

DRAINING AT HAARLEM.—A report made to the Legislature of Holland states the successful progress of the works for laying dry the Haarlem Meer. The advances made amount to 666,000*l.*, and a further sum of 160,000*l.* is to be raised, of which the expenditure of 100,000*l.* can be spread over several years. It is expected the whole undertaking will be completed in 1854.

THE REGENT'S PARK.—It is understood that the Commissioners of Woods and Forests have at length determined that this park shall be properly drained, and Mr. Fulton, engineer, has been instructed to report as to the practicability and expense of such an undertaking.

NEW SURVEY OF CANNINGTON PARISH.—Mr. Hawkes, of Williton, has been appointed to make the new survey of the parish of Cannington. He is to receive 52 guineas for his services.

MALVERN ABBEY CHURCH.—At Great Malvern Abbey Church, a new organ, built for the church, was opened on the 24th ult. Various works have been going on in this interesting old building for some time past,—unfortunately, however, not under professional direction. The same zeal which has been displayed here in doing mischief, would, under proper advice, have effected much good.

* In consequence, apparently, of our observations on the latter, they have been trying to improve the wooden "scallops" to the boxes, and the undertaker's *escutcheons* at the back; but nothing can be done with them.

TENDERS

For the Sunderland Baths and Wash-Houses, Mr. Oliver, architect. The following tenders for engineering have been received:—

Glaholm and Son, Newcastle	£780	0	0
Glaholm, Sunderland	780	0	0
Wight and Son	760	0	0
Lamb, Sunderland	760	0	0
Watson, Newcastle	706	0	0
Clark, Monkwearmouth (Accepted)	704	0	0

The engineering work includes 1 large boiler, 1 hot and 1 cold water cistern, 12 zinc baths, 4 shower-baths, 2 vapour baths, hot water and steam fittings to 34 wash-tubs, drying closet with 34 horses, heating-plate, ventilators, 3 self-acting water-closets, pipes, &c.

TO CORRESPONDENTS.

"Capt. N." (We were unable to give more space to the subject. As to the project, the object to be gained seems to justify some risk).

"Competition," "T. H.," "J. H.," "Artifex," "Constant Subscriber" (double windows are useful to keep out sound, and to preserve warmth; there would be less condensation with them than without), "F. A.," "P. B.," "Pupillus" (the window in question is probably not original), "J. J. L.," "E. W. G.," "X. Y. Z." (If treated in the proper spirit they would serve, not otherwise), "T. J.," "J. W.," "W. B. C.," "R. K." (received), "J. T. N.," "Lady B.," "Chemicus," "S. W.," "W. C. S.," "O&A.," "C. H." (the matter has gone by, we cannot return to it), "Thrapston Corn Exchange" (we are asked to say that the name of the builder was Mr. John Eaton, not Mr. George Eaton as stated), "W. A." (view shall be engraved, if not sent elsewhere), "T. C. T."

"Books and Addresses."—We have not time to point out books or find addresses.

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ADVERTISEMENTS.

UNIVERSAL ADVERTISING OFFICES.—Advertisements are inserted in all the London and Country Newspapers, and every paper published in France, Germany, Italy, Spain, America, and the whole continent of Europe, and the papers supplied at WILLIAM THOMAS'S Universal Advertising and Newspaper Offices, 19 to 21, Catherine-street, Strand.—Private correspondence and commercial and legal documents translated in all languages.

ROYAL ARMS in WOOD, STONE, or IRON, WANTED for a SHOP FRONT, from 3 to 4 feet in length. Lowest price, &c., to be sent to DIXONS and TOOKE, 28, Ely-place, London.

LIGHTERAGE.—To Saw-Mill Proprietors, Timber, Slate, and Stone Merchants, or others, requiring Lighterage.—The Advertiser having a large number of Barges, is willing to undertake LIGHTERAGE at prices that defy competition.—CHARLES STRUTTON, 34, Commercial-road, Lambeth.

LEAD WORKS, HAMMERSMITH.—F. CLARK and SON, Lead, Glass, Oil, and Colour Merchants, beg to inform plumbers, builders, &c., that their present cash price for sheet-lead and pipe, delivered free to any part of London, is 18*l.* per ton. Ditto, ditto, in exchange, 2*l.* 10*s.* per ditto.

NOTICES of SEPULCHRAL MONUMENTS in ENGLISH CHURCHES, with illustrations. By W. HASTINGS KELKE. 8vo., 3*s.* 6*d.* London: C. COX.

NEWS! NEWS! NEWS!—The best, cheapest, and largest Newspaper in the world.—LLOYD'S WEEKLY LONDON NEWSPAPER contains sixty large columns of the latest intelligence from all parts of the globe, price only threepence, postage free. Send three postage stamps to E. LLOYD, 12, Salisbury-square, London, and receive one copy as a sample.

THE EXPOSITOR, with 25 Engravings, No. 2, Nov. '9, contains—The Great Globe—the Great Building—Royal Commissioners—Money for the Building, and how it may be got—How the Britannia-bridge was built—Birmingham Marl Quarry and Brickmaking, with numerous Illustrations—Liverpool Letter—German Intelligence—Canadian Intelligence—Patents—Becker's Self-acting Siding Ston—Thomson and Elms's Firewood Cutting Machine—List of Registered Designs and Patents, and all the latest intelligence as to the Great Exhibition.—Price 3*d.*; stamped, 4*d.*—J. CLAYTON, Jun., 265, Strand; and all Booksellers and Newsmen.

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CONTENTS:—Tables for the Discharge of Water through Sluices from Tanks, Reservoirs, and Vertical Pipes, head ·02 to 350 feet—over Weirs, depth ·02 to 3 feet—Mean Surface and Bottom Velocities of Rivers and Tidal Estuaries, 5 to 850 feet per minute—Discharge of Pipes and Culverts, universal Table—Arterial Drains and other Cuts, from 18 inches to 28 feet in depth, with Bottom Widths from 3 to 1,200 feet—Theoretic Head required for passing bends at various velocities—Value of Water in Horse Power for one foot of fall, and Application to Mills—Tables of Expenditure of Water, Population, and proportional Drainage Areas—Flood Discharges, and Mean ditto for various Rainfalls—Weight per yard, and safe Head of Water—Iron Pipes—Safe Load of Beams, 6 to 30 inches in depth, with proportional bottom Flanches—Tables of Weight of Iron and other Metals, with properties of various materials—Useful Weights and Measures—Velocities—Gradients—Comparative Measures, Feet and Chains—Tables for Marine Surveying—Mountain Barometer—Equivalent Pressures of Mercury and Water. Concluded with Tables of the Areas and Circumference of Circles—Powers and Roots—and Short Tables of Logarithms.

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October, 1850.

GREEN'S REGISTERED WIND-GUARD, with shield, is a cure for those chimneys which smoke by the wind, called down draft. It has no moveable parts, and can be cleansed by the common sweeping machine. Price, from 10*s.* to 15*s.*—Apply to J. GREEN, 3, Vittoria-place, Euston-square, London.—N.B. Can be sent to any part of the country.

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These Ventilators are so arranged that the requisite quantity of air may be admitted for the due ventilation of an apartment without the slightest draught being felt by the occupants; and as they are placed in the external wall, their action is not impeded when the house is closed for the evening, at which time a constant supply of fresh air is most required.—HAYWARD, BROTHERS, sole Manufacturers, 195, Blackfriars-road, and 117, Union-street, Borough; and of all respectable ironmongers, builders, &c.

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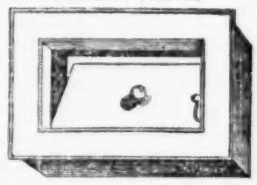
With internal action, and all the latest improvements.



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See Priced List Advertisement, Saturday, June 15.

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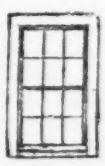

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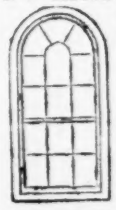

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Invaluable for cheapness, beauty, and permanence: not half the cost of other paints, always ready for use, will keep good for years, and therefore well suited for exportation. Brilliant black, 2s.; rich browns, 2s. 9d.; greens and light colours, 4s. per gallon.
G. BELL and Co., 2, Wellington-street, Goswell-street.

JOHNS and Co.'s PATENT PERMANENT STUCCO WASH, CEMENT, and PAINT.—The attention of the trade and the public generally is solicited to these very excellent and well-known materials, which, for their beauty, durability, imperviousness, and cheapness, are unequalled. THE PERMANENT WASH, as a substitute for common lime-wash or water-colour, is an article which has long been wanting for stucco and brick-work; it is of a stone colour, but may be tinted to any other; is perfectly dry in twenty-four hours; will not wash off; is very little dearer than the common washes; and, being a non-absorbent, is admirably adapted for railway stations, union workhouses, schools, barracks, prisons, &c. One cwt. is sufficient to cover, with two coats, 250 square yards. THE CEMENT, from the great reduction in price, and its suitableness for internal as well as external surfaces, places it above all other materials of its kind; it has no caustic qualities; may be painted or papered in a few days; never blisters, cracks, or vegetates; soon becomes as hard as stone; and may be cleaned with a brush and water. The merits of the PAINT are well known for its application to stucco work of all kinds, and external work generally. Numerous testimonials, prospectuses, and every information may be obtained, on application to the Sole Agent, PHILIP HARE, at the Warehouse, 22, Steel-yard, Upper Thames-street. A liberal allowance to wholesale dealers.

MARTIN'S PATENT
FIRE-PROOF AND ORNAMENTAL CEMENT,
APPLICABLE FOR
ALL INTERNAL PURPOSES WHERE PLASTERING IS REQUIRED.

This invaluable Cement has now been before the public so many years, and obtained so high a standing in the estimation of all who have used it, that it is unnecessary to comment on its merits. Messrs. STEVENS and SON however feel called upon to observe, that, from the greater extent of surface which a given quantity of MARTIN'S will cover, as compared with other Cements for internal use, there will be found a gain of 16½ per cent. in material, full 7 per cent. less in price, with an additional saving in labour of 10 per cent., by its allowing about forty minutes for working, being less than one-tenth of the time of other cements of a similar nature, therefore worked with greater facility, making together the enormous saving of full THIRTY-THREE PER CENT.; its advantages therefore cannot admit of doubt. Specimens, showing its beauty, hardness, and applicability to all plain and ornamental purposes, may be seen; and the Cement, in any quantity, obtained of Messrs. STEVENS and SON, at their Plaster and Cement Works, 186, Drury-lane, London.—Manufactory, Derwent Mill, Derby.

N.B. This Cement will receive paint or paper in a few hours after the completion of the work by the plasterers.

THE PARIAN CEMENT, for INTERNAL STUCCO.

No. 4, Porchester-terrace North, Paddington,
15th February, 1850.

Dear Sirs,—I have been reluctant to speak to the merits of Parian Cement, until sufficient experience enabled me to do so. As an extensive builder I have given it many trials, and now beg to express my perfect satisfaction with it. The house from whence I date was first inhabited by me on 7th September last, not a brick having been laid before the 1st of June!—that is to say, in three months and one week! I stuccoed the walls throughout with Parian; papered some, painted and marbled others; and the whole work has been dry and perfect from that hour. I need say no more.—I am, Gentlemen, yours respectfully,
WM. SCANTLEBURY.

Messrs. Chas. Francis and Sons, Nine Elms.

ATKINSON'S CEMENT.—This Cement has hitherto been manufactured in Yorkshire, and, through long detention at sea, has often proved stale and unfit for use on its arrival in London. By the arrangement now made, the Cement will be manufactured in London, and thus presented to consumers in a fresh and genuine state, by the sole Agents, J. B. WHITE and SONS, Millbank-street, Westminster.

PORTLAND CEMENT, as manufactured by J. B. WHITE and SONS, possesses all the properties of the best Roman Cement, but has the advantage over that material of wholly resisting frost. When used as a stucco it does not vegetate or turn green in damp situations, and requires no colouring. Employed as an hydraulic mortar for brickwork, it carries four to five measures of sand to one of cement, and is proved by trial to become harder and stronger in these proportions than Roman Cement with but one measure of sand. This superior connecting power, combined with its eminently hydraulic properties, point it out as the fittest material for building sea and embankment walls, the lining of reservoirs, cisterns, and baths, and for all those purposes where strength and a perfect resistance to water are required.

Manufacturers—J. B. WHITE and SONS, Millbank-street, Westminster, and 36, Steel-street, Liverpool.

PORTLAND CEMENT, solely MANUFACTURED by WILLIAM ASPDIN, Son of the Patentee.—Messrs. ROBINS, ASPDIN, and Co. request reference to No. 296, page 491; and also Nos. 284 and 285, pages 343 and 351 of "The Builder," for accounts of EXPERIMENTS on the strength of Portland Cements, whereby the great superiority of their Cement is manifest. This Cement has been proved for upwards of twenty years in the Thames Tunnel to resist the action of water; it is stronger in its cementitious qualities, harder, and more durable than any other description of Cement; it does not vegetate, oxydate, or turn green; nor is it affected by any atmospheric influence whatever the climate, resisting alike the action of frost and heat. It is manufactured to set in from five to sixty minutes. For all purposes that Cement is applicable the Proprietors challenge competition.—Orders received by Messrs. ROBINS, ASPDIN, and Company, at their Manufactory, Northfleet, Kent, and their Wharf, Great Scotland-yard, Whitehall; also at their Depôt, 46, Hanover-street, Liverpool.

KEENE'S and PARIAN CEMENTS, for internal stucco, are employed very advantageously in place of wood for skirtings, architraves, and panel mouldings, and for in-door flooring, instead of stone. The peculiar properties of PARIAN Cement allow of its being painted or papered upon within a few hours of its application, and thus render it an important substitute for common plastering in those cases where expedition and beauty of finish are essential.—J. B. WHITE and SONS, Millbank-street, Westminster, Patentees of KEENE'S Cement, Licensees of PARIAN Cement.

KEENE'S MARBLE CEMENT.—A new application of this beautiful material renders it useful and durable EXTERNALLY, either as a substitute for pure statuary, or the most rare and valuable coloured marbles, with lasting polished surface, superseding the use of Scagliola, and other similar materials in appearance, durability and cost. CAPITAL REQUIRED.—Address, paid, K.M.C., Office of "The Builder," 2, York-street, Covent-garden. N.B. Specimens are in course of preparation for the Exhibition of 1851.

BLUE LIAS LIME, PLASTER, &c.

THOMAS FREEN and CO. having connected with their ROMAN CEMENT WORKS an extensive Manufactory of GROUND BLUE LIAS LIME and PLASTER of PARIS, beg to call the attention of Builders and others to the very superior quality of these articles, which they are prepared to supply upon the most reasonable terms.
WORKS—Tuscany Wharf, Regent's Canal, Kingaland-road, London.
DEPOTS—Lee's Wharf, Paddington; and Phœnix Wharf, Greenwich.
N.B. Grey and Chalk Lime, Paving Bricks, Tiles, Artificial Stone, Plasterers' Hair, &c. &c.

TO ARCHITECTS, BUILDERS, &c.

ALL descriptions of TERRA COTTA, CEMENT, and PLASTER CASTINGS executed in a first-rate manner, on reasonable terms, by J. HERBERT and SON, Modellers, &c., 42, Parker-street, Drury-lane. A splendid assortment of Corinthian, Ionic, and other Capitals; Centre Flowers, Ballusters, Trusses, &c.; Elizabethan and other Chimney Shafts.

CEMENT, PLASTER, and COMPOSITION ENRICHMENT MANUFACTORY, 18, Crown-street, Finsbury-square, London.—WM. SMART, Jun., begs to inform architects, builders, and the trade that he is prepared to execute works of any magnitude in first-rate style and finish at very low charges. Architects' designs carefully modelled and truthfully carried out, and estimates given on receipt of detailed drawings, &c.—Wm. SMART, Jun., ARCHITECTURAL MODELLER and ORNAMENTIST, 18, CROWN-STREET, FINSBURY, London. Established in the family three-fourths of a century.

TO MASONS.

REDUCED PRICE of MARBLE SLAB.—The LONDON MARBLE AND STONE WORKING COMPANY continue to sell Slab, of superior quality and well sawn, at their Manufactory, ESHER-STREET, near Millbank, Westminster, at the following reduced prices, viz.:—
1 inch, at 1s. 2d. per foot.
1 inch, at 1s. 4d. "

VEINED MARBLE.—TO MASONS, BUILDERS, &c.—NOW on SALE, at the Marble and Wood Sawing Mills, Commercial-road, Pimlico, The largest STOCK in London of VEINED MARBLE, in SLABS, at the following low prices for Cash:—
¾ inch .. .. .. 1s. 3d. per foot super.
1 inch .. .. .. 1s. 6d. "
Sawing, 3d. per foot super, fetched and delivered; Bardilla, Dove, Black, and Gold Statuary, and all other Marbles in general use, in slab and block, equally low.

SAMUEL CUNDY, Mason and Builder, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Pimlico.
GOTHIC WINDOWS, ALTAR SCREENS, and other Works produced at a remarkably cheap rate.
FONTS from 5l. upwards. Specimens on view of the Early English, Decorated, and Perpendicular styles.
ALTAR TABLETS Illuminated.
First-rate ARTISTS retained for SCULPTURED GOTHIC CARVINGS.
MEMORIAL CROSSES, MONUMENTS, TOMBS, HEADSTONES, &c., in great variety of design. Letters cut and complete for fixing in the country.
The Public are respectfully invited to view the carefully selected and manufactured Stock (by improved machinery) of Veined Marble Chimney-pieces—cheap and good.
DAIRIES fitted up with MARBLE or SLATE SHELVES.—MINTON'S Encaustic and White or Blue and White Porcelain Tiles in great variety of pattern.
A GOOD MARBLE CHIMNEY-PIECE FOR FORTY SHILLINGS.
A liberal discount to the trade.

LLEWELYN and BANGOR SLATE COMPANY.—On the Cost Book Principle.

The Llewelyn Quarry is a part of a sett of thirty acres in the parish of Llanllechid, Carnarvonshire, at the base of the Llewelyn mountain, six miles from the port of Bangor. A lease of which, for twenty-nine years, has been secured at the usual royalty. The sett comprises twelve acres of slate, and about twenty acres for the deposit of waste, and adjoins the estate of Colonel the Honourable Edward Douglas Gordon Pennant, M.P. The slate bed, or lode, being a continuation of the great roofing slate formation worked by him at the celebrated Penrhyn Quarry, from which the Llewelyn Quarry is distant about half a mile. It will be a matter of surprise to the public to find that a quarry immediately adjoining the Penrhyn Quarry, which for the last twenty years or more has yielded a profit of upwards of 80,000l. per annum, should now be in the market: the circumstance is, however, thus accounted for.

In the valley at the foot of the Penrhyn Quarry, close to the river Ogwen and the turnpike-road, the course of the slate has been diverted from a straight line by the uprising of a huge mass of green stone, throwing a portion of the slate bed or lode, which is here about 500 yards wide to the north-west; this western branch passes under the village of Bethesda, close to which are the Pandraineog and Coytmor Quarries, now in full operation; the other portion of the bed keeps its original course, about north east, and dips under a lofty ridge of Killas or Clay Slate, and has hitherto been lost to the miner and geologist. It has, however, lately been discovered, that on the north side of this Killas ridge the roofing slate lies only about four fathoms below the surface. The discovery was made a few weeks since by sinking a shaft about two-thirds down the slope of the ridge or mountain, below which point there is sufficient fall for the deposit of waste, and every facility for working a quarry on an extensive scale. The slate is of the finest quality and colour.

In three months sufficient Slate Rock may be cleared of the over-lying Killas to supply from 50 to 100 quarrymen and Dressers, and a further extent of ground progressively opened. The slate raised at the Llanberis and Penrhyn Quarries leaves a profit of at least 100 per cent. on the labour cost; and this Quarry when opened, if worked with skill and energy, cannot fail to be equally profitable. This important discovery it is now proposed to work out by a Company in 5,000 Shares of 4l. each; Deposit 1l. per Share (a portion of which has already been taken). It is estimated that 20,000l. may ultimately be required to develope the resources of this extensive and valuable sett; but, in accordance with the cost book principle, no call can be made without the sanction of a majority of the shareholders. For the remaining Shares and Prospectus application to be made to Mr. T. Uzzell, Broker, 73, Old Broad-street, and to the Office of the Company, 7, Lothbury.
S. J. MOSTYN, Sec.

STIRLING'S BELVEDERE SLATE WORKS, Belvedere-road, Lambeth.—A reduced list of prices of the best WELCH SLATE SLABS, planed both faces, will be sent on application (post paid) being made, and inclosing a postage stamp. The prices are under those advertised for inferior slates.

THE PIMLICO SLATE WORKS.—Patronized by Royalty, the Heads of the Nobility, the Clergy, Architects of Eminence, Builders, Railway Contractors, and the Public generally.—MAGNUS'S ENAMELLED SLATE (notwithstanding the vile imitations and infringements of his patent that are attempted) continues to grow in favour with the public, being handsomer, more durable, and very much cheaper than marble.—Price lists sent to any part of the kingdom gratis, and a book of drawings sent postage free on receipt of 3s. in postage stamps. Cisterns, Filters, Dairy and Larder Shelves, Wine Cellar Fittings, Slabs, and every variety of plain Slate Work, at prices that defy competition.—49 and 50, Upper Belgrave-place.

MARKET WHARF, REGENT'S-PARK BASIN.—MARTIN and WOOD solicit the attention of Builders, Masons, and others, to their stock of Portland, York, and Derby Stone; also Bangor Slates, Lime, Cement, Plaster, Bricks, Tiles, Laths, Fire-goods, Fire-stone &c., sold at the lowest possible prices for Cash. Portland Head-stones, Ledgers, Steps, Landings, &c., cut to order on the shortest notice. Tarpaulings let on hire. A Stock of Northen's Drain Pipes, Syphons, &c., always on hand. Mortar, Lime and Hair, Fine Stuff, &c. Prompt attention paid to country orders.

BATH STONE.—RANDELL and SAUNDERS, Quarrymen, Bath, have appointed MARTIN and WOOD their sole agents in London. M. and W. beg to inform Architects, Masons, Builders, &c., that a large assortment of the much approved CORSHAM DOWN and other BATH STONE will always be kept at the Depot, opposite the Great Western Railway Station, Paddington. Orders will also be received at Market Wharf, Regent's-park Basin.

BATH STONE DEPOT, Great Western Railway Station, Paddington.—EDWARD FLUESTER respectfully informs Builders, Masons, and others, that he continues to supply the Box-hill Ground Stone, Corshamdown, Coombedown, and Farleighdown Stone, of the best quality, and at the lowest prices. Painswick Stone in blocks and slabs of any thickness always on hand.—N.B. Stone and other goods landed and carted.

CAEN STONE.—P. FOUCARD, Quai des Abattoirs, Caen (propriétaire de Carrières à Allemagne), offers CAEN STONE guaranteed from the first quarries at Allemagne, delivered to vessels or waggons (free of expense), from the depôt at the Whitby and Scotch Wharf, 14, Fore-street, Limehouse. Contracts taken for any quantities.—Cargoes shipped to order, from Caen, to any part of the coast.—Apply to P. FOUCARD, at the Office, 29, Stoney-street, Borough Market; or to Mr. S. WEBSTER, at the Wharf.—Samples to be seen, and references to be had, at Mr. MARSH'S, No. 3, Charlotte-row, near the Mansion House.

TAYLOR and CO.'s "EUSTON" PAVEMENT.—The durability and safety of this Pavement for Streets is generally admitted, and the ornamental character imparted by the arrangement of the small stones particularly adapts it for carriage-drives, court-yards, stabling, &c. Specimens may be seen at the Gateways of Hyde Park Corner, Albert Gate, and Stanhope Gate, and also at the Euston Station of the London and North-Western Railway,—(Temporary Offices), 1, Chapel-place, Duke-street, Westminster.

PAVING, 2s. 9d. PER SQUARE YARD Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 14, JOHN-STREET, ADELPHI.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

WHITE AND ORNAMENTAL — BROWN LAVA

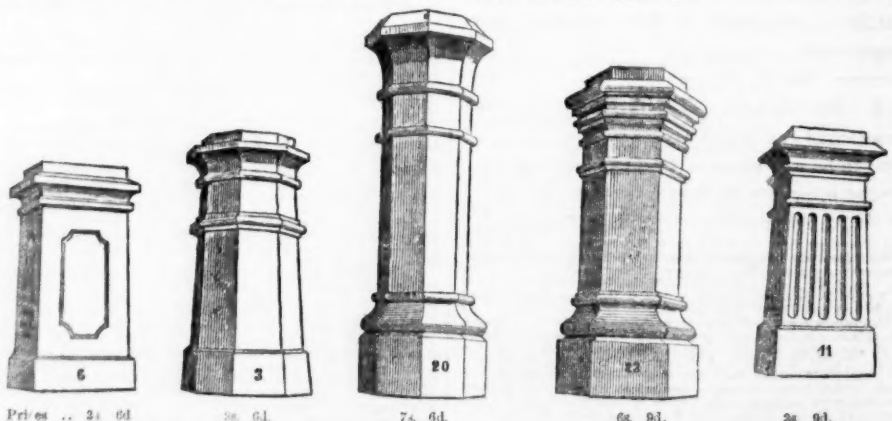
PATENT METALLIC LAVA,
Manufactured only by
Messrs. ORSI and ARMANI,

For the INTERIOR of CHURCHES, MUSEUMS, HALLS, VESTIBULES, CONSERVATORIES, &c. &c.; for Foot Pavement, Flooring, Covering Railway Arches, Terraces, Roofs, &c. &c.
SAMPLES LAY FOR INSPECTION. List of Prices, and every Particular, may be obtained at the Office, 6, Guildhall-Chambers, Basinghall-street, City; and at the Office of "The Builder."

IMPORTANT TO OIL AND RAILWAY GREASE MERCHANTS AND FACTORS.

FOR SALE, at the Works at Weymouth, or may be delivered to any part of the kingdom, the superior product by distillation of BITUMINOUS SCHALE, or SCHISTUS, "LIQUID BITUMEN," containing, 1st, a Volatile Oil, or Mineral Spirit; 2nd, an Oil of a greater density; 3rd, a Fatty Mineral Oil; 4th, Paraffine; 5th, Grease, slightly alkaline; 6th, Tar. The Volatile Oil, or Mineral Spirit, is admirably adapted as a solvent, and may be used for all purposes to which the most highly rectified spirit of turpentine is employed, or may be used for spirit and camphine lamps. The second oil, not so very volatile, will dissolve in any proportion with seed or fish oils, of which it considerably augments their illuminating power, and prevents their becoming rancid. The third is admirably adapted for lubricating machinery, and contains—the 4th, Paraffine, which is easily obtained by crystallization, and requiring but little treatment to make excellent candles. The 5th, Grease, superior to animal oil or fat for the use of carriages. The 6th, Tar, perfectly black, very siccative, and which may be used generally for all purposes of varnish, and where mineral tar is employed.—Any further information may be obtained either of Mr. W. C. HOMERSHAM, Schiste Works, Weymouth; or of Mr. C. F. CHEFFINS, 11, Southampton-buildings, Chancery-lane, London.

HERTSLET'S WHARF, ADELPHI, near the Halfpenny Steam-Boat Pier.—
FIRECLAY CHIMNEYS FAR SUPERIOR TO CEMENT.



Prices ..	2s. 6d.	3s. 6d.	7s. 6d.	6s. 9d.	2s. 9d.
Height ..	2 ft. 6 in.	2 ft. 9 in.	4 ft.	3 ft. 4 in.	2 ft. 6 in.

N.B.—Upwards of Thirty other Patterns, at proportionate prices, from 2s. 3d. to 35s.
FIRE-BRICKS, best quality, 65s. per 1,000. Certified by Dr. URE, to be superior to Stourbridge.
10,000 out of old stock, at 55s. per 1,000.
PATENT HOLLOW BRICKS, 4d. per foot superficial.
PATENT DOUBLE-SOCKET JOINTS FOR PIPES, &c.
FIRE-LUMPS at very low rates.